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38TH CONGRESS, 1st Session. } SENATE. { Ex. Doc. No. —

U.S. Post office dept.

MESSAGE

OF THE

PRESIDENT OF THE UNITED STATES,

AND

ACCOMPANYING DOCUMENTS,

TO THE

TWO HOUSES OF CONGRESS,

AT

THE COMMENCEMENT OF THE FIRST SESSION

OF

THE THIRTY-EIGHTH CONGRESS.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1864.

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REPORT

OF

THE POSTMASTER GENERAL.

Post Office Department,
October 31, 1863.

FINANCIAL CONDITION.

Sir: I have the honor to present the following report of the condition and operations of this department for the fiscal year which terminated June 30, 1863. During that period the financial condition of the department has been one of increasing prosperity, and it is gratifying to be able to state that the actual postal revenue has nearly equalled the entire expenditures—the latter amounting to $11,314,206 84, and the former to $11,163,789 59, leaving a deficiency of but $150,417 25. There is, therefore, good reason to expect that within a brief period the department will become self-sustaining.

APPOINTMENT OFFICE.

NUMBER OF POST OFFICES.

The whole number of post offices remaining established on the 30th June, 1863, including the suspended offices in the insurrectionary States, was 29,047, showing an increase over the preceding year of 172. Postmasters are appointed at 550 of these offices by the President, and at 28,497 by the Postmaster General. Their classification by States is shown in the Appendix, No. 1.

CHANGES IN 1863.

Eight hundred and thirty post offices have been established during the year and 658 have been discontinued. The number of names and sites that have been changed, involving a change of postmasters in most instances, is 222, and there have been 2,431 resignations of postmasters, 245 deaths, and 1,115 removals. The whole number of cases acted upon is 5,501, and the number of postmasters changed from all causes during the year is 3,956. The details of these changes will appear in the Appendix, table No. 2.

SPECIAL AND LOCAL AGENTS, ROUTE AGENTS, AND BAGGAGE MASTERS.

The number of special agents in the service at the close of the fiscal year was sixteen, whose aggregate salaries amounted to $26,500. The number of route agents was 387, at an aggregate compensation of $289,260; the number of baggage masters in charge of through or express mails was 93, at an aggregate pay of $7,440; and the number of local agents was 45, at a compensation of $27,824.

LETTER-CARRIERS.

The law authorizing the free delivery of mail matter by carriers took effect on the first day of July last. About that time the system was put in operation at 49 of the larger offices, with a competent corps of carriers to each, numbering in the aggregate 449, at an aggregate annual compensation of $300,680.

Our own experience and that of Europe demonstrates that correspondence increases with every facility for its conduct, and free delivery in the principal towns and cities has been proved in the mother country to be a facility attended with very remarkable results. Further time is required to prove whether it will operate in the same way here, but, as far as ascertained, the results are highly satisfactory.

In the city of New York there are now, daily, five deliveries from the office, and six collections of letters for the mails from the depositories in the various parts of the city. During the quarter ending September 30, 1863, there were delivered by carriers 2,069,418 letters, and 1,810,717 collected for the mails and city delivery, being an increase of 968,825 letters (about 25 per cent.) over the preceding and last quarter under the old system. Returns from other offices indicate results equally flattering.

A table exhibiting the offices at which the new system is in operation, the number of carriers at each, with their aggregate compensation, appears in the Appendix, No. 3.

FOREIGN MAILS.

The aggregate amount of postage (inland, sea and foreign) upon the mails exchanged during the year with Great Britain, Prussia, France, Hamburg, Bremen and Belgium, was $1,224,675 21; an increase of $80,579 39, as compared with the preceding year. Of this amount $757,038 99 was collected in the United States, and $467,636 22 in Europe; the excess of collections in the United States being $289,402 77. The tables accompanying the report of the Auditor, and table (No. 4) hereto annexed, show the details of the service between this and the several foreign postal departments.

The total postages upon mails exchanged with the British North American provinces was $225,743 30, being an increase of $47,989 79 over the amount reported for the previous year. Of this amount $124,480 45 was collected in the United States, and $101,262 85 in the British provinces. Excess in favor of the United States, $23,217 60.

The total postages upon the mails conveyed to and from the West Indies amounted to $54,997 24. Of which amount the sum of $40,584 87 was paid to the owners of the steamships performing the sea service to and from Havana and other West India ports.

The amount of United States postages on the mails exchanged with Central and South America, *via* Aspinwall and Panama, was $15,078 26—all of which was paid to Cornelius Vanderbilt, esq., for the transportation thereof to and from Panama.

The total cost of the United States transatlantic mail steamship service was $332,184 80; being the aggregate amount of sea postage upon the mails conveyed. The earnings of the respective steamship lines performing the service were as follows, viz:

The Liverpool and New York and Philadelphia Steamship Company, performing fifty-three round trips between New York, Queenstown and Liverpool	$180, 076 54
The Canadian line of mail steamers, performing fifty-two round trips between Portland and Liverpool, and Quebec and Liverpool	72, 643 40
The North German Lloyd Steamship Company, performing fourteen and one-half round trips between New York and Southampton	46, 229 91
The New York and Hamburg Steamship Company, performing thirteen round trips between New York and Southampton	33, 234 95

GERMAN POSTAL UNION.

I regret to state that no progress has been made since my last report in the negotiations for a new postal convention with Prussia, embracing the states composing the German-Austrian Postal Union. It was then confidently expected that a new convention resulting in important reductions of postage, the conclusion of which was made to depend upon the concurrent action of Great Britain, would have been agreed upon at an early date. But on account of some obstacle presented by Austria in respect to a proposed reduction of the territorial transit charges upon British closed mails conveyed through that country no result has been attained.

GREAT BRITAIN.

Additional articles to the United States and British postal convention have been agreed upon, reducing the transit charges upon all closed mails sent by either country through the territory of the other, to an uniform standard of four pence (eight cents) per ounce for letters, and five pence (ten cents) per pound for printed papers. The reduced rates, however, are not to take effect until the negotiations pending between the British post office and the German post offices, on the subject of a mutual exchange of closed mails, have been satisfactorily concluded. A copy of these additional articles is annexed, (No. 5.)

Additional articles have also been agreed upon between this department and the British post office, establishing on the part of the United States a new office of exchange at San Francisco for the correspondence despatched from the United Kingdom for California, Oregon, Washington Territory, the Sandwich Islands, British Columbia, and Vancouver's Island. A copy is annexed, (No. 6.)

VANCOUVER'S ISLAND AND BRITISH COLUMBIA.

The correspondence passing through the mails between the United States and the British provinces on the northwest coast of America having greatly increased in bulk within the past few years, it has become necessary to conclude postal conventions with the provinces of Vancouver's Island and British Columbia, establishing and regulating an interchange of mails. I have therefore proposed to the postal authorities of those provinces to adopt a similar arrangement to that in operation with Canada and the other British North American provinces. The proposition has been favorably received, and I hope soon to conclude postal conventions on that basis.

COSTA RICA

The rates of postage levied in Costa Rica upon the correspondence addressed to and received from the United States having been reduced by a decree of the legislative chambers of that republic of the 1st September, 1862, to one-half those previously charged, a like reduction of the United States postage, chargeable upon the correspondence sent to or received from Costa Rica, was ordered on the 18th of May, 1863, by and with the advice and consent of the President, in conformity with the provisions of the 2d section of the act of March 3, 1851. A reciprocal reduction was thus made in the rates of postage levied in each country, securing to international correspondence all the advantages proposed by the postal convention, as originally negotiated and approved by the Senate; but which, for the reason stated in my previous report, was not ratified by the government of Costa Rica.

ECUADOR.

I have also to state that negotiations are pending for a postal convention with Ecuador similar to that concluded with Guatemala.

PRIVATE SHIPS TO CONVEY MAILS.

I take occasion to renew the recommendation made in my letter of March 3, 1862, addressed to Messrs. Collamer and Colfax, chairmen, respectively, of the Post Office committees of the Senate and the House of Representatives, that all private ships or vessels departing from the United States for foreign ports should be required, as the condition of their clearance, to convey the mails upon such terms as are now or may hereafter be allowed by Congress.

INTERNATIONAL POSTAL CONFERENCE.

In my last annual report I stated some of the reasons which rendered general concert of action necessary between the Post Office Department of the United States and the postal administrations of foreign governments. The conference, at that time proposed, assembled at Paris on the 11th day of May, 1863, and its deliberations were conducted under the presidency of the able director general of posts of France, M. Vandal. A more numerous representation of foreign governments appeared than I had ventured to anticipate. Delegates were present from the post departments of Austria, Belgium, Costa Rica, Denmark, Spain, the United States, France, Great Britain, Italy, the Netherlands, Portugal, Prussia, the Sandwich Islands, Switzerland, and the Hanseatic cities; and the government of Ecuador adhered by letter to the action of the conference. The debates not only exhibited distinguished ability, and a thorough acquaintance with postal relations, but a most gratifying spirit of liberality towards the popular interests involved in international intercourse. In addition to the principles settled by the conference, the information with respect to different systems of administration, exchanged among the delegates, gave a new motive to postal improvement. Much valuable information touching foreign administrations, which was transmitted to this department in the reports of the United States delegate, will aid me in the future improvements in our domestic administration, which I hope to effect at an early period.

The following rules, thirty-one in number, were agreed upon by the conference:

SECTION 1. The articles which must or may be forwarded by the post from one country to another are divided into six classes: 1st, ordinary letters; 2d, registered letters, without declaration of value; 3d, registered letters, containing declared value; 4th, corrected proof-sheets, business papers, and other written documents not of the nature of letters; 5th, samples of merchandise (including grains and seeds) of limited weight and without mercantile value; 6th, printed matter of all kinds in sheets, (stitched or bound,) sheets of music, engravings, lithographs, photographs, drawings, maps, and plans.

SEC. 2. Wherever it is possible, the prepayment of postage upon ordinary letters should be at the option of the sender; but, in case of such optional prepayment, unpaid letters must bear a moderate additional charge.

SEC. 3. Letters insufficiently prepaid by the postal stamps of the despatching country must be rated as unpaid, deducting, however, the value of the stamps affixed.

SEC. 4. Registered letters, whether with or without declaration of value, must in all cases be prepaid to destination.

SEC. 5. All articles under bands, in order to take the benefit of a rate of postage less than that applicable to letters, must be prepaid.

SEC. 6. International correspondence of all kinds, duly prepaid to destination, shall not be charged with any additional rate whatever on delivery.

SEC. 7. The rates upon international correspondence shall be established according to the same scale of weight in all countries.

SEC. 8. The metrical decimal system, being that which best satisfies the demands of the postal service, shall be adopted for international postal relations, to the exclusion of every other system.

SEC. 9. The single rate upon international letters shall be applied to each standard weight of fifteen grammes, or fractional part of it.

SEC. 10. The single rate upon corrected proof-sheets, upon written documents not of the nature of letters, and upon samples of merchandise, (including seeds,) shall be applied to each standard weight of forty grammes, or fractional part thereof, to one address.

SEC. 11. The standard weight for the single rate upon articles under band, embraced in the sixth class of the first resolution aforesaid, must be established by special convention between the contracting parties.

SEC. 12. The rate upon letters must be fixed according to the weight stated by the despatching office, except in case of manifest error.

SEC. 13. Registered letters, without declaration of value, shall be rated with a moderate fixed charge in addition to the rate applicable to ordinary letters of the same weight.

SEC. 14. Registered letters, containing declared value, shall be rated with a charge in proportion to the amount of the declared value, in addition to the postage and to the fixed charge applicable to the other class of registered letters.

SEC. 15. In case of loss of a registered letter without declared value, and in case of loss or spoliation of a registered letter with declared value, each office shall be held responsible for acts upon its own territory, and in the service for which it has received a premium of insurance. Fifty francs should be allowed to the sender of an unvalued registered letter lost, and for a valued registered letter so much of the declared value as shall have been lost or abstracted.

SEC. 16. Wherever intermediate transit charges render it practicable, the rates upon international correspondence should be the same, by whatever routes the mails may be conveyed.

SEC. 17. Where there are different mail routes, correspondence shall be despatched by the route indicated by the sender upon the address, or by the rate of postage prepaid, if different rates exist. In the absence of such indications the despatching office will determine the route which it considers most advantageous to the public interest.

SEC. 18. Unpaid letters, delivered by one administration to another for a country to which prepayment is compulsory, shall be returned to the despatching office as wrongly sent.

SEC. 19. Articles under band and subject to a lower rate of postage, with compulsory prepayment, shall, in case of insufficient prepayment, be despatched to their destination, charged with a suitable extra rate. If such articles are wholly unpaid, they shall not be despatched.

SEC. 20. International postal accounts cannot be suppressed by a rule of general application; but they should be simplified as far as possible. For that purpose offices of exchange should not be required to return acknowledgments of receipt of mails, except for the correction of errors of the despatching office.

SEC. 21. International post offices, accounting with each other for the rates and charges upon correspondence exchanged between them, whether in open or closed mails, shall account, as far as possible, by the piece for the correspondence in the open mails, and by the net weight for the correspondence in closed mails.

SEC. 22. Correspondence re-forwarded by reason of a change of residence of the person addressed shall not, on that account, be liable to a supplementary charge in favor of offices interested in the postage previously accrued.

SEC. 23. Registered letters addressed to persons who have departed for a foreign country not interested in the postage prepaid shall be forwarded to the new residence of the persons addressed, charged with additional postage and with a supplementary registration fee, to be paid on delivery.

SEC. 24. International correspondence which shall have become dead shall be returned, without cost, to the despatching office.

SEC. 25. As high transit charges upon correspondence present an insurmountable obstacle to the establishment of an international system of correspondence upon conditions advantageous to the public, the transit charge for each country shall never be higher than one-half of the interior rate of the transit country, and for countries of small territorial extent this transit charge shall be even less.

SEC. 26. The cost of sea conveyance claimed by one country from another shall in no case be higher than the rate charged upon its own correspondence by the country by whose vessels the conveyance shall be effected.

SEC. 27. It is desirable that postal administrations having accounts with each other should serve as intermediaries for the transmission of sums of money from one country to another by means of international money-orders, whenever this can be effected without complications disproportioned to the advantages resulting from it.

SEC. 28. In case of the non-payment at the stipulated time of the balance due upon an adjustment of an international postal account, the amount of the balance shall bear interest from the expiration of the stipulated period at the rate agreed upon by convention.

SEC. 29. In the adjustment of uniform postal rates the greatest possible number of countries should be included in the same zone and subject to the same rate.

SEC. 30. Free conveyance of its official communications with other postal administrations should be granted to each postal administration.

SEC. 31. There should be a class of letters denominated "urgent" for delivery by express messengers, for which a special supplementary charge shall be paid.

I have adopted this basis of international postal intercourse for the treaties hereafter to be made under the direction of this department, and hope to reorganize our foreign system on that plan. Advices have reached me that the Swiss administration has adopted the same system, and that the governments of Belgium and of Italy have concurred. There is reason to believe that the other European governments will also appreciate the importance of the uniformity and simplicity of postal action proposed by the conference, and will adhere to the principles of the Paris resolutions. A reduction of postal rates, combined with a large increase of postal correspondence, will naturally result from the inauguration of the new system. The enlightened sentiments expressed by the majority of the delegates lead me to hope that I shall be able to establish only two single rates of postage for letters on the one hand, and for all other postal correspondence on the other, exchanged between the United States and all parts of Europe.

It is my intention to publish a translation of the record of the conference as an appendix to this report.

I deem it proper, in concluding my remarks on this subject, to make known the fact that the public owes the suggestion to invite this international conference to the Hon. John A. Kasson, who represented our government in it with such zeal and ability as to command the thanks and warm approval of his associates. I do not doubt that important and lasting advantages are to flow from this conference, due in a great degree to his assiduity, practical ability, and earnestness in the cause of progress.

CONTRACT OFFICE.

TRANSPORTATION STATISTICS.

Table No. 7 A exhibits the service as it stood on the 30th of June last in the States of Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Delaware, Maryland, Ohio, Western Virginia, Michigan, Indiana, Illinois, Wisconsin, Iowa, Missouri, Kentucky, California, Oregon, Kansas, and the Territories of New Mexico, Utah, Nebraska, Washington, Colorado, and Dakota, at which time there were in operation in those States and Territories 6,161 mail routes, the number of contractors being 5,595. The length of these routes was 139,598 miles, and the mode of service divided as follows, viz:

Railroad	22, 152
Steamboat	4, 744
With celerity, certainty, and security	112, 702

The annual transportation of mails was 56,226,015 miles, costing $5,740,576, divided as follows, viz:

Railroad	22,871,558, at	$2,538,517,	about 11 cents a mile
Steamboat	2,004,771, at	224,542,	about 11⅕ cents a mile
With celerity, certainty, and security	31,349,686, at	2,977,463,	about 9½ cents a mile

The number of route agents in the service was 387, at a compensation of	$289, 260 00
The number of local agents was 45, costing	27, 824 00
The number of mail messengers was 1,466, costing	170, 872 06
The number of baggage masters in charge of express mails was 93, costing	7, 440 00
The number of agents employed on steamers conveying mails to southern ports was 8, costing	650 00
	496, 046 06
This sum added to the cost of service in operation on the 30th of June, 1863	5, 740, 576 00
Makes the total at that date	6, 236, 622 06

MAIL LETTINGS OF 1863.

The contract term for the southern section, comprising the States of Virginia, North Carolina, South Carolina, Georgia, and Florida, expired on the 30th of June last, and the new term commenced on the 1st of July following. The lettings of contracts for this term embraced only the routes in Western Virginia, that being the only portion of the section in which the mails are transported under authority from this department.

Compared with the service of the 30th of June, 1862, the length of routes is increased 5,585 miles with an annual increase of transportation of 2,793,490 miles, at a decrease in cost of $113,258, being about two per cent. This saving is due principally to the result of the lettings of 1862 and the operations of the service under the system of considering such bids alone as are made according to the requirements of the act of March 3, 1845, for letting the contracts for transportation of the mails, and which has already been referred to in the report of 1862.

Other tables showing the operations of the Contract office are appended to this report. (See No. 7 B, C, and D.)

MAILS ON THE PACIFIC AND ATLANTIC.

The floods on the North Pacific coast winter before last, and the insurrection in the South Atlantic States, interrupted the overland mails for a few months on the west coast, and continue to interrupt them on the east. In both cases I have had recourse to the routes by sea for the conveyance of mails between the ports in our possession. These were formerly the usual routes, and there is no law prohibiting the use of them by the department.

The Sixth Auditor has, however, refused to pay the contractors for this service, on the ground that contracts for service by sea between the ports of the United States are unauthorized by law, and illegal. He errs, I believe, both in the construction of the law and also as to the extent of his authority to revise and annul contracts made by the Postmaster General. It becomes necessary, therefore, for Congress to act on the subject to enable me to pay for the service already performed, and to continue it.

OVERLAND MAILS.

The contract on the overland route from St. Joseph, Missouri, to Placerville, California, authorized by the act of Congress of March 2, 1861, will expire by its own limitation on the 30th June, 1864. To continue the service I have divided the route into four parts, and issued invitations for proposals to convey the mails on these divisions as separate routes, the whole, however, being united by continuous schedules so as to form one route, as at present, but terminating at Folsom City, the intersection of the Sacramento Valley railroad, instead of Placerville.

The act of Congress directing one continuous route limits the duration of the service under it to June 30, 1864. To continue the service beyond that date I have fallen back upon the various enactments of Congress, covering the whole line as post roads in detached portions. This seems to me to be the preferable mode of letting the service, and most likely to secure the best terms. Legislation will therefore only be needed to secure the conveyance by sea of printed matter intended for the west coast, and for raising the rates of postage on such matter for intermediate places on the overland route. The last day for receiving bids for these routes is, however, fixed for the 3d of March, 1864, allowing sufficient time for any action that Congress may deem best to adopt. The service on this route has been performed during the past year with commendable regularity and efficiency, and no accident, Indian hostility, or other casualty has occurred to prevent or retard the safe and prompt transmission of mails and passengers, the trips being, with rare exceptions, accomplished within the schedule time.

The contract for the service between Sacramento, California, and Portland, Oregon, and Olympia, Washington Territory, authorized by the act approved June 21, 1860, will expire on the 15th September, 1864, and as the route was but an aggregation of previously existing routes, it has become necessary to return to the original authority of the department over them, and invite bids for service on separate portions, as before. This has been done by advertisement dated on the 15th October.

FINANCE OFFICE.

For the details of the financial operations of this department during the past fiscal year reference is made to the accompanying able and comprehensive report of the Auditor. From that document the following summary of the receipts and expenditures is derived:

EXPENDITURES FOR 1863.

The expenditures of the department during the fiscal year ended June 30, 1863, amounted to....................	$11, 314, 206 84
in which is included the sum of $184,182 59 paid for mail transportation of previous years.	

REVENUE FOR 1863.

The gross revenue for the year 1863, including receipts from letter-carriers and from foreign postages, amounted to....	11, 163, 789 59
Showing a deficiency of..........................	150, 417 25

REFERENCE TO THE AUDITOR'S REPORT.

The Auditor's report, No. — of the Appendix, may be consulted for details of the revenue and expenditures under their several heads.

DEFICIENCY OF 1863.

The estimated deficiency of revenue for 1863, as presented in the annual report from this department on the 2d December, 1861, was....................................	$3, 845, 000 00
Deduct the actual deficiency	150, 417 25
Excess of estimated over actual deficiency	3, 694, 582 75

The discrepancy in this particular is thus accounted for. It was deemed expedient, as stated in the report above noted, to submit partial estimates for the cost of the postal service in States and districts where it was then suspended—in the greater portion of which, however, there has not as yet been any restoration of such service. The expenditures for 1863 were then estimated at $12,528,000, which is $1,364,210 41 in excess of the amount actually expended. On the other hand, the revenues of 1863 were estimated at the usual increase of four per cent. on those of 1861, (during the greater part of which year mail service was interrupted throughout the Union,) making $8,863,000, which is $2,480,789 59 less than the actual receipts—the latter being 33⅝ per cent. more than those of 1861.

COMPARISON OF RECEIPTS AND EXPENDITURES FOR 1860, 1862, AND 1863.

The postal expenditure in 1860, the year immediately preceding the rebellion, was	$14,874,772 89
The postal expenditure in 1863	11,314,206 84
Excess of expenditure in 1860	3,560,566 05

The actual revenue from postal receipts in 1863 was	$11,163,789 59
The same in 1860	8,518,067 40
Excess of revenue in 1863	2,645,722 19

Showing that while the annual cost of postal service is at present three and one-half millions less than when it was uninterrupted throughout the Union, the receipts therefrom are increased to the extent of more than two million six hundred thousand dollars.

The expenditures of 1863 were	$11,314,206 84
The expenditures of 1862	11,125,364 13
Increase in 1863	188,842 71

The actual revenues of 1863 were	$11,163,789 59
The actual revenues of 1862	8,299,820 90
Increase in 1863	2,863,968 69

From the above comparison of the receipts and expenditures of the last two fiscal years it appears that the increase of expenditure in 1863 bears but a small proportion to the increase of the revenue, the one being about 6½ per cent. of the other.

The experience of the past year gives every reason to believe that the gross revenues of the department for the year 1864 will equal, if they do not considerably exceed, the estimates thereof submitted in the last annual report, and that the expenditures will not surpass the amount therein stated. The appropriations already made for the service of the current fiscal year are therefore ample.

Estimates for 1865.

The expenditures of all kinds for the fiscal year ending June 30, 1865, (see table No. 9,) are estimated at...........	$13,422,000 00
The gross revenue for the year 1865, including foreign postages and miscellaneous receipts, is estimated at an increase of five per centum on the revenues of 1863, making....	11,722,000 00
Estimated deficiency of revenue compared with estimated expenditures	1,700,000 00
But from this sum is to be deducted the amount of the permanent appropriations made by the acts of March 3, 1847, and of March 3, 1851, to compensate the department for carrying free mail matter	700,000 00
By which the estimated deficiency is reduced to..........	1,000,000 00

being the whole amount estimated to be required from the treasury for the year 1865.

The earnings of the department in the transportation of free mail matter during the past fiscal year have not yet been expended.

In estimating the probable expenditures of 1865, under the several heads of appropriation, those of the last fiscal year have, in general, been taken as a basis of calculation. But an increase of certain items of anticipated expenditure has been made in order to provide, to some extent, for the cost of restoring the postal service of the United States in sections of the country now under insurrectionary control. To this cause alone is the estimated deficiency for 1865 to be attributed. But this deficiency is not one-fifth of that of 1860—the latter being upwards of $5,600,000.

NUMBER OF QUARTERLY RETURNS RECEIVED.

The whole number of post offices in operation during the year was 20,145, and the number of quarterly returns received therefrom was 78,239.

DRAFTS AND WARRANTS.

The whole number of drafts and warrants issued during the year, in payment of balances reported by the Auditor to be due creditors of this department, was 15,944. The warrants were drawn on the Treasurer of the United States, five assistant treasurers, and seven designated depositaries, and the drafts on twenty-five post office depositaries, and on postmasters at three hundred and fifty-eight draft offices.

Out of the net revenues of the department for the year, the sum of $4,563,341 15, being over sixty per cent. thereof, was concentrated in the hands of the above-named depositaries and at draft offices. Of this amount, $3,882,454 93 was disbursed during the year, leaving $681,086 22 subject to draft on the 1st of July, 1863. The remainder of the net revenue was collected by mail contractors, by means of orders on postmasters at collection offices, prepared and sent out by the Auditor, and through payments by postmasters to mail messengers and special mail-carriers.

POSTAGE STAMPS AND STAMPED ENVELOPES.

STAMPS AND ENVELOPES ISSUED.

The number of postage stamps, stamped envelopes and newspaper wrappers, sent to postmasters during the fiscal year ending June 30, 1863, is given in detail in table No. 10, in the Appendix to this report. The value of the stamps issued during that period was $9,683,384, of stamped letter envelopes $634,821, and of stamped newspaper wrappers $20,545. The aggregate value of the issue of the year under notice, as compared with that of the preceding year, shows an increase of $2,503,668.—(See table No. 11.)

VALUE OF STAMPS SOLD.

The total value of stamps and stamped envelopes sold by postmasters during the year, as ascertained from the records of the Auditor of the treasury for this department, was $9,624,529 62, which exceeds, by $2,714,397 73, the sales of the previous fiscal year.

NEW DENOMINATION OF STAMPS AND ENVELOPES.

The act of March 3, 1863, entitled "An act to amend the laws relating to the Post Office Department," having advanced the rate of postage upon drop letters and transient printed matter to two cents the single rate, new stamps and stamped envelopes of that denomination were prepared, and have been furnished to postmasters since the 1st of July last.

CANCELLATION OF POSTAGE STAMPS.

During the past year indelible cancelling inks have been used at the principal post offices, and the employment of printing ink for cancellation—the latter being much more difficult to efface than ordinary writing ink—has been continued at the smaller offices.

It is not believed that the department has ever suffered any considerable loss from the use of washed or restored stamps, yet there has been a constant endeavor, either by the introduction of some effectual method of cancellation, or by a peculiar process in the manufacture of the stamps, to render impossible a second use thereof for the payment of postage. No improvement of this nature has yet been perfected, though much attention has been given to the subject, and many ingenious devices for this purpose invented. Instruments for cancellation, with cutting or abrading edges, have been submitted by various parties, and upon being thoroughly tested were found to be inherently defective, owing to their liability to injure, or to be injured by, the contents of letters or packets. These instruments, furthermore, speedily became dull or disarranged by ordinary use, requiring frequent sharpening or adjusting.

After much thought, and a thorough consideration of the many instruments and devices which have been submitted or suggested to the department to attain the desired result, the conclusion has been reached that the only certain means of effectual cancellation is in the preparation of the stamps in such manner that, when once affixed to a letter, they cannot be removed therefrom without involving their destruction; or by their being printed in colors sufficiently permanent to resist the action of air and light, but which would readily be effaced by any agent intended to remove the cancelling marks. Three varieties of postage stamps, alleged to possess one or the other of these qualities, have been submitted to the department, and their respective merits are under consideration.

LOSSES OF POSTMASTERS FROM ROBBERY BY ARMED MEN.

I beg leave to renew the recommendation made in my last annual report, that special provision be made by Congress authorizing the Postmaster General to adjust and allow, upon the presentation of proper evidence of loss, the claims of such postmasters as may have sustained losses of postage stamps and stamped envelopes by reason of the occupation and robbery of their offices by bodies of armed men. There have been reported to the department about one hundred cases of this description, and the aggregate amount of claims thereupon will not exceed six thousand dollars. It is a circumstance worthy of consideration, that in most, if not in all of these instances, these postmasters have suffered greatly by the destruction of their private property. The Post Office Department, under existing regulations, not having the authority to make an allowance for the loss of public property by robbery or theft, the only remedy is in the hands of Congress.

THEFT OF STAMPS FROM POST OFFICES.

Additional legislation is also required in respect to post office thefts. The stealing of postage stamps *from a post office* is not made a felony under any existing statute. Some months since three persons were convicted in Indiana of the robbery of a post office in that State, and the stealing of letters and a considerable amount of postage stamps. The former not having been proved to contain "any article of value or evidence thereof," and there being no penal enactment against the taking of the latter, the parties were necessarily sentenced to punishment for one of the slightest offences against the postal laws—having been each fined five dollars, and imprisoned three months. I would suggest the establishment, by statute, of a suitable penalty for offences of this nature. The best mode, perhaps, of attaining this result, would be the enactment of a law making it a penal offence to steal from or forcibly enter into any room or building which may, at the time of such stealing or entry, be used or occupied as a post office.

DEAD LETTERS.

NUMBER OF DEAD LETTERS RECEIVED.

The whole number of ordinary dead letters of every description received and examined during the year was 2,550,416, being 268,398 more than in the preceding year.

MONEY AND OTHER VALUABLE LETTERS.

The number of these letters which contained money was 18,527, and the value of their contents was $77,861 31, showing an increase over the number of letters of this class received during the previous year of 8,052, or 76 per cent., and an increase in the amount of money enclosed of $31,322 42, or 67 per cent.

Of these letters there were registered and mailed for delivery to their respective owners during the last fiscal year, 18,219, of which 15,048, containing $63,627 72, were finally delivered. To bring about the latter result it was necessary to send out many of these letters a second time, and some of them, in consequence of the owners' change of residence, or for other cause, were sent out three or four times in order to secure their restoration.

The number of dead letters covering deeds, bills of exchange, drafts, and other valuable papers, received, registered, and returned for delivery to the writers, was 8,332, and the aggregate nominal value of their contents was $1,544,277 81, being a decrease in the number of this class of letters, as compared with the previous year, of 1,431, and in the value of the enclosures, of $645,172 19. Of these letters 7,559 were delivered to the owners.

During the year 16,763 valuable letters or packages of a third class were received and registered. Of these 12,579 were sent out for delivery, 10,918 of which contained daguerreotypes or photographs, 764 articles of jewelry, and 897 miscellaneous articles. Out of the whole number sent from the dead letter office for delivery, 8,273 were restored to the writers or senders.

There has been a continued increase in the receipts of letters of the class under notice, the great majority of which contain daguerreotypes or card photographs, and of these a large proportion are sent by soldiers or their correspondents. The whole number of such dead letters exceeds by 85 per cent. the amount thereof received in the preceding year. It will be observed, that while there has been a very considerable increase in the quantity of dead letters containing money and of those covering daguerreotypes and miscellaneous articles, the number of such as contain deeds, bills of exchange, drafts, &c., has sensibly diminished. The increase of the two former classes is doubtless owing, in a great degree, to the fact that the mails are very generally used by the large number of persons in the military service of the United States, and by their numerous correspondents, for the transmission of money, photographs, and similar articles of value, while, on the other hand, they have less occasion to forward by mail deeds, drafts, or negotiable paper, than other classes of the community. The nature of the military service and the many accidents to which soldiers are liable necessitates frequent changes of locality, which retard or prevent the delivery of their letters, and many of these are, in consequence, sent to the dead-letter office. Upwards of 5,000 money letters, being nearly one-fourth of the whole of that class of letters received during the year, were addressed to soldiers.

REASONS FOR LOSSES OF VALUABLE LETTERS.

For the reasons above indicated, complaints of the loss of money letters sent by or directed to soldiers and their families have been numerous. In many instances such losses were directly traced to dishonest letter carriers in the military service, and therefore beyond the control of this department. Moreover, many letters are lost through carelessness and indifference on the part of some of the persons who distribute mail matter in our armies. The power to correct or to lessen this evil rests with commanding officers, who would do their subordinates a great service by selecting competent and reliable persons to superintend the reception, transmission, and delivery of mail matter, and holding them responsible for the faithful performance of these duties.

MONEY ORDER SYSTEM.

In this connexion I beg leave to renew the recommendation made in my last annual report, that a postal money order system be established to facilitate the transmission of small sums of money through the mails, which I am confident would not only prove a great convenience to civilians and soldiers, but would almost entirely obviate the loss of money letters, the great majority of which enclose small remittances.

CAUSES OF NON-DELIVERY OF VALUABLE LETTERS.

Upon an examination of the reasons for the non-delivery of valuable letters, in the first instance, to the persons addressed, it is found that, in accordance with the past experience of this department, the failure of a letter to reach its destination is, in the vast majority of instances, the fault either of the writer or person addressed—such failure being more frequently caused by a change of residence of the latter.

Full details of the operations of the dead-letter office, with respect to "money," "minor," and "miscellaneous" letters, will be found in the Appendix, tables Nos. 12, 13, and 14.

In compliance with a request from the War Department, 8,822 dead letters and packets, containing soldiers' descriptive lists and certificates of discharge, have been transmitted to the Adjutant General, after being carefully registered in this department.

It appears from the foregoing statements that the whole number of valuable dead letters registered and sent out from the dead-letter office during the past fiscal year was 42,613, being 17,202 more than during the previous year.

In addition to the above, 55,044 letters containing postage stamps or other articles of less than one dollar in value, and which were not deemed of sufficient importance to require registration, have been returned to the writers or senders. Letters of this description which are not susceptible of restoration are destroyed, with their contents. The number of postage stamps destroyed in conformity with this practice, from July 1, 1862, to 30th June, 1863, was 43,748, and the aggregate value thereof was $1,318.

LETTERS HELD FOR POSTAGE, ETC.

The number of letters which could not be forwarded from the offices where mailed, or be delivered therefrom, because of unpaid postage, or because so badly directed, and which were consequently sent to the dead-letter office, amounted to 196,414. The number thereof "held for postage" was 167,894, the number "held for carrier's fee" 9,954, (all of which latter were contributed exclusively by the offices at Boston, New York, and Philadelphia;) and the number "misdirected" and imperfectly or illegibly addressed was 18,566, of which nearly two thousand were without any address or direction whatever, and in several instances contained sums of money or other enclosures of value.

The class of letters under consideration was disposed of as follows, viz: 157,352 were despatched to the writers or persons addressed; 753, which originated in foreign countries with which we have no postal conventions, were filed to await application; and the remainder, consisting of notices, advertisements, prospectuses of gift enterprises, fraudulent lottery circulars, valentines, and similar worthless matter, were destroyed.

Table No. 15, accompanying this report, shows the number of letters held for postage or carrier's fee, or because misdirected, at forty-six of the principal offices, together with the number delivered upon notification to the person addressed and the number sent to the dead-letter office.

Under the provisions of the new postal law, which went into operation on the 1st July, 1863, letters are no longer detained in post offices on account of unpaid postage or carrier's fee.

LETTERS ADDRESSED TO POINTS IN THE REBELLIOUS STATES.

By reason of the continued suspension of regular postal communication with sections of the country under insurrectionary control, a considerable number of letters, amounting in the aggregate to 24,314, found their way, by various channels, to the dead-letter office. Of these letters the number addressed to rebel localities was 21,200, and out of this number 17,888 were of domestic and 3,312 of foreign origin. The former were marked "mails suspended," and sent back to the writers; and the latter were returned, with a similar indorsement, to the countries where they originated. Of the class under consideration, 3,114 were written in localities not subject to the authority of the United States government. Nearly all letters of this description were placed in the custody of this department by the military authorities, who very properly have entire control of the transmission of correspondence beyond or into their lines; and most of them were originally sent unsealed to the commanding officer at Fortress Monroe by flag of truce. These letters were, after examination, duly mailed to the persons addressed, charged with dead-letter postage.

ORDINARY DEAD LETTERS.

Under the authority given to the Postmaster General by the act approved January 21, 1862, 1,007,255 ordinary dead letters, not evidently worthless, were placed in new envelopes and returned to the offices where originally mailed to be delivered to the writers. Of this number 4,898 were sent to banks and insurance companies; 89,642 to business firms, and the remainder to individuals. 19,002 of these letters, which were directed to sick and wounded soldiers in hospitals and failed to reach the persons addressed, were returned free of postage to the writers, generally relatives of soldiers, and the greater portion of them were delivered. The number of dead letters of the class under notice, written in foreign languages, was 35,861. (For details see table No. 16.)

Of the whole number sent out for restoration to the writers, 287,211, being about 25 per cent., were again returned to the department. In the great majority of instances the reasons assigned by the postmaster for such return were, "not called for," "not known," or "not found." The proportion "refused" was comparatively small, not exceeding 12 per cent. Since the reduction in the rate of dead-letter postage from six to three cents, which took effect on the 1st of July last, this proportion has steadily decreased.

After deducting from the whole number of letters sent out, such as were returned a second time, and those sent free of postage, including hospital letters, &c., there remained 692,220 letters on which dead-letter postage was collected at six cents each, yielding a gross revenue to the department of $41,533 20, which exceeds by $21,533 20 the aggregate compensation of the clerks employed in sending out these letters. At the present reduced rate of three cents for a single return letter, there would still have been a surplus of $1,533 20, while it is confidently believed that a much larger number of return letters will hereafter be delivered to the writers, not only in consequence of the reduction of dead-letter postage under the new postal law, but also of the more prompt restoration of such letters. To secure the latter result the department has instructed postmasters to forward to the dead-letter office, except in special cases, all letters remaining unclaimed one month after being advertised, instead of two months, as formerly.

FOREIGN DEAD LETTERS.

The number of dead letters returned unopened to foreign countries during the year was 137,145, and the amount of unpaid postage thereon was $8,281 40. The number received in the same condition from foreign countries was 51,619, on which the unpaid postage amounted to $1,479 53. (See tables Nos. 17 and 18.)

It was found that among the unpaid foreign dead letters a considerable number directed to officers and soldiers in the field remained undelivered, not having been claimed nor postage paid thereon by the persons addressed, although a notice is directed to the latter by postmasters in every case. To secure the delivery of as many of these letters as possible, a record of them was carefully kept since the 17th of April last, and a list of those directed to each regiment was sent monthly to the commanding officer, with a request that if the person addressed was still attached to the regiment, an application, accompanied with the amount of postage due, might be made for his letter; if not, that the cause of his absence from the regiment might be stated. By this means, out of 1,527 letters of this class, 323 were delivered, and some 800, before being returned to foreign countries, were indorsed with a statement of the cause of non-delivery, such as "dead," "discharged," "dismissed," "resigned," &c.—information which in many instances could not fail to prove important to the writer, who is usually a relative of the soldier.

CORRESPONDENCE UNPAID AND NOT FRANKED.

By the provisions of the 32d section of the new postal law, which took effect on the 1st of July, 1863, all correspondence addressed to any executive department, or to any officer therein, must be prepaid, except official communications written by some officer of the department, or an officer under its control or responsible to it, and in such cases it is required that the officer shall sign his name, with his official designation, under the words "official business" on the envelope.

As correspondence of this nature had invariably been transmitted free of postage under former postal laws, a rigid enforcement of the restriction in question was not at first attempted, until sufficient time had elapsed for the public to become familiar with the requirements of the new law.

It was found, however, at the expiration of more than two months, that private individuals corresponding with the departments generally neglected or evaded the payment of postage on their correspondence, which was duly forwarded to its destination with the unpaid postage charged at double rates. Great numbers of communications not franked by the military or civil officers writing them were similarly disposed of.

The tendency of this state of things was to relieve persons from the necessity of paying postage on communications to the executive departments, and thereby to render the provision in question inoperative. Hence it became necessary to direct postmasters to forward all mail matter for the departments, which was not prepaid or franked, to the dead-letter office, where it is examined, and, when practicable, returned to the writer for payment of the postage, or for his official frank, as the case may require. This plan involves considerable additional labor in the office, but it has almost entirely stopped the practice of evading or neglecting the payment of postage. Large numbers of official letters, however, addressed to the several bureaus of the War and Navy Departments, are still sent without any frank by officers at remote stations, who, by reason of their situation, have doubtless failed to receive information of the requirements of the new law.

REVISED CODE OF LAWS.

In concluding this report, I would ask the consideration by Congress of the revised code of the laws relating to the Post Office Department, which was submitted by me at its last session, and which is for the most part but a digest of the existing postal laws, the provisions of which would be but slightly affected by the modifications therein suggested.

I have the honor to be, very respectfully, your obedient servant,

M. BLAIR, *Postmaster General.*

The PRESIDENT.

No. 1.

Table showing the increase and decrease of post offices in the several States and Territories; also the number of post offices at which appointments are made by the President of the United States and the Postmaster General.

States and Territories.	Whole number of post offices June 30, 1862.	Increase.	Decrease.	By the President of the United States June 30, 1862.	Increase.	Total by the President June 30, 1863.	Total by the Postmaster General June 30, 1863.	Whole number of post offices in the U. States June 30, 1863.
Alabama	875	......	......	8	......	8	867	875
Arkansas	730	......	......	2	......	2	728	730
Arizona	......	......	......	......	......	......	......	......
California	404	......	6	15	......	15	383	398
Colorado	39	20	......	......	1	1	58	59
Connecticut	380	3	......	13	......	13	370	383
Dakota	11	......	2	......	......	......	9	9
Delaware	68	1	......	1	1	2	67	69
District of Columbia	4	......	......	2	......	2	2	4
Florida	175	......	1	2	......	2	172	174
Georgia	893	......	......	12	......	12	881	893
Idaho	8	......	......	......	......	......	8	8
Illinois	1,507	28	......	31	5	36	1,499	1,535
Indiana	1,267	......	......	12	14	26	1,241	1,267
Iowa	1,005	8	......	9	6	15	998	1,013
Kansas	257	13	......	2	2	4	266	270
Kentucky	825	......	43	8	7	15	767	782
Louisiana	388	......	1	5	......	5	382	387
Maine	792	8	......	15	2	17	783	800
Maryland	414	......	6	5	3	8	400	408
Massachusetts	648	9	......	34	10	44	613	657
Michigan	820	17	......	17	5	22	815	837
Minnesota	474	......	4	4	1	5	465	470
Mississippi	667	1	......	8	......	8	660	668
Missouri	1,041	......	38	9	3	12	991	1,003
Nebraska	108	13	......	2	......	2	119	121
Nevada	7	7	......	......	2	2	12	14
New Hampshire	389	......	......	10	......	10	379	389
New Jersey	468	12	......	10	6	16	464	480
New Mexico	23	......	5	......	......	......	18	18
New York	2,575	9	......	59	23	82	2,502	2,584
North Carolina	1,185	......	......	7	......	7	1,178	1,185
Ohio	1,951	......	5	32	15	47	1,899	1,946
Oregon	93	6	......	2	......	2	97	99
Pennsylvania	2,463	67	......	37	6	43	3,487	2,530
Rhode Island	92	3	......	4	2	6	88	94
South Carolina	634	......	......	4	......	4	630	634
Tennessee	1,023	1	......	5	......	5	1,019	1,024
Texas	923	......	......	4	......	4	919	923
Utah	58	1	......	......	1	1	58	59
Vermont	425	10	......	7	2	9	426	435
Virginia	1,246	......	2	13	......	13	1,231	1,244
Washington	59	10	......	......	......	......	69	69
West Virginia	543	......	2	2	......	2	539	541
Wisconsin	918	41	......	14	7	21	938	959
	28,875	287	115	426	124	550	28,497	29,047

No. 2.

Total operations of the appointment office for the year ending June 30, 1863.

States and Territories.	Established.	Discontinued.	Names and sites changed.	Appointments on change of names and sites.	Resigned.	Removed.	Deceased.	Total cases.
Alabama								
Arkansas								
Arizona								
California	24	30	5	3	65	19	4	147
Colorado	25	5	3	2	20	5		58
Connecticut	6	3	1		30	15	4	59
Dakota		2			4	1	1	8
Delaware	4	3	1	1	9	3		20
District of Columbia						1		1
Florida	1	2	1					4
Georgia								
Idaho	2				3	1		6
Illinois	61	33	14	8	222	67	28	425
Indiana	32	32	16	14	226	76	12	394
Iowa	52	44	20	16	148	52	12	328
Kansas	30	17	10	9	67	16	7	147
Kentucky	47	90	13	12	148	49	12	359
Louisiana		1				6		7
Maine	10	2			60	46	8	126
Maryland	24	30	3	2	50	18	4	129
Massachusetts	11	2	1	1	27	18	11	70
Michigan	43	26	22	17	92	67	9	259
Minnesota	35	39	8	6	79	21	1	183
Mississippi		1			1			2
Missouri	85	123	24	21	170	87	20	509
Nebraska	20	7	6	4	31	7	1	72
Nevada	7		2	1	1			10
New Hampshire	2	2			25	16	4	49
New Jersey	14	2	4	3	31	33	6	90
New Mexico		5			4	3		12
New York	35	26	12	9	194	131	32	430
North Carolina	1	1				1		3
Ohio	41	46	20	12	242	121	17	487
Oregon	12	6			14	2	1	35
Pennsylvania	97	30	18	15	212	108	27	492
Rhode Island	3	1			8	2	1	15
South Carolina						2		2
Tennessee	3	2			2	1		8
Texas						1		1
Utah	5	4			6	2		17
Vermont	10		1	1	36	21	5	73
Virginia	1	3	1	1		8		13
Washington	13	3	1		16	4	1	38
West Virginia	17	19			61	11	3	111
Wisconsin	57	16	15	7	127	73	14	302
	830	658	222	165	2,431	1,115	245	5,501

No. 3.

Post offices at which letter-carriers are employed, with the number and compensation of the latter.

Office.	Aggregate of carriers.	Aggregate of pay.
New York, N. Y	137	$103,600
Boston, Mass	32	22,360
Baltimore, Md	22	15,900
Brooklyn, N. Y	18	12,600
Philadelphia, Pa	119	79,700
Cincinnati, O	12	8,400
Washington, D. C	11	7,700
St. Louis, Mo	7	4,400
Williamsburg, N. Y	6	4,200
Albany, N. Y	5	3,500
Providence, R. I	5	3,000
Newark, N. J	7	3,500
Newport, R. I	2	750
New Haven, Conn	3	1,500
Salem, Mass	3	1,050
Lowell, Mass	3	1,350
Louisville, Ky	3	2,100
Cleveland, O	3	1,500
Hartford, Conn	2	1,200
Manchester, N. H	2	900
Germantown, Pa	2	900
Charlestown, Mass	3	1,500
Lawrence, Mass	2	800
New Bedford, Mass	4	1,620
Roxbury, Mass	2	1,000
Fall River, Mass	2	800
Pittsburg, Pa	3	1,700
Troy, N. Y	2	1,200
Syracuse, N. Y	1	400
Utica, N. Y	1	600
Paterson, N. J	2	800
Jersey City, N. J	2	1,000
Trenton, N. J	2	800
Wilmington, Del	2	1,000
Worcester, Mass	3	1,800
Nashua, N. H	1	500
Reading, Pa	1	450
Lancaster, Pa	1	500
Norristown, Pa	1	450
York, Pa	1	300
Newburyport, Mass	1	400
Cambridgeport, Mass	1	500
Hoboken, N. J	1	300
Poughkeepsie, N. Y	1	300
Alleghany, Pa	1	500
Bath, Me	1	300
Frederick, Md	1	350
Chelsea, Mass	1	500
Marblehead, Mass	1	200
Total	449	300,680

No. 4.

Showing operation and results of the foreign mail service for the fiscal year ending June 30, 1863.

I. POSTAGES ON UNITED STATES AND EUROPEAN MAILS.

The aggregate amount of postage (sea, inland, and foreign) on the mails exchanged with the United Kingdom was	$733, 517 38
With Prussia, was	212, 710 48
France, was	169, 106 05
Hamburg, was	58, 627 66
Bremen, was	39, 481 81
Belgium, was	11, 231 83
Total postages	1, 224, 675 21

Being an increase over the amount reported for the previous year of $80,579 39.

The postages on mails *sent* to Europe were as follows, viz:

To Great Britain	$369, 927 47
Prussia	104, 540 10
France	86, 473 41
Hamburg	38, 949 41
Bremen	22, 604 99
Belgium	5, 674 62
Total	628, 170 00

The postages on mails *received* from Europe were as follows, viz:

From Great Britain	$363, 589 91
Prussia	108, 170 38
France	82, 632 64
Hamburg	19, 678 25
Bremen	16, 876 82
Belgium	5, 557 21
Total	596, 505 21

Postages collected in the United States	$757, 038 99
Postages collected in Europe	467, 636 22
Excess of collection in the United States	289, 402 77

Number of letters sent from the United States	2, 882, 795
Number of letters received from Europe	2, 720, 236
Total	5, 603, 031

Being an increase of 402,368 over the number reported for the previous year.

Number of newspapers sent from the United States	2, 331, 761
Number of newspapers received from Europe	916, 426
Total	3, 248, 187

Being a decrease of 149,881 from the number reported for the previous year.

The excess of postages on mails *sent* from the United States to different countries of Europe over that accruing on mails received from the same countries was as follows:

Great Britain	$6,337 56
France	3,840 77
Hamburg	19,271 16
Bremen	5,728 17
Belgium	117 41
Total	35,295 07

The excess of postages accruing on mails *received* over those sent was as follows:

Prussia	$3,630 28

II. CLOSED MAILS.

Weight of closed letter mails *received* from Prussia....ounces..	85,981
Weight of closed letter mails *sent* to Prussia..........ounces..	80,220½
Total	166,201½
Weight of British closed mails for Canada..........ounces..	32,717
Weight of Canada closed mails for Great Britain.....ounces..	27,274¼
Total	59,991¼
Weight of British and California closed mails *received*..ounces..	12,749½
Weight of British and California closed mails *sent*.....ounces..	5,535½
Total	18,285
Weight of British closed mails for Havana..........ounces..	4,882
Weight of British closed mails for Mexico..........ounces..	165½
Total	5,047½
Amount paid to Great Britain for the sea and territorial transit of United States and Prussian closed mails through the United Kingdom	$67,948 33
Amount received from Great Britain for the sea and territorial transit of British closed mails through the United States	26,821 02

III. OCEAN TRANSPORTATION.

The sea transportation of mails to and from Europe was performed as follows:

By foreign steamships employed as United States mail packets—

Of the Canadian line	$135,657 31
Of the Liverpool, New York, and Philadelphia Steamship Company	297,372 75

Of the New York and Hamburg Steamship Company	$121,328 09	
Of the North German Lloyd Company	124,994 68	
		$679,352 83
By British mail packets of the Cunard line		545,322 38
Total		1,224,675 21

IV. BALANCES ON SETTLEMENT OF ACCOUNTS WITH FOREIGN POST OFFICE DEPARTMENTS.

Balance due Great Britain on adjustment of accounts for 2d, 3d, and 4th quarters of 1862	$73,850 19½
Balance due France for 4th quarter of 1861 and 1st and 2d quarters of 1862	19,816 83
Balance due Bremen for 3d and 4th quarters of 1862 and 1st quarter of 1863	15,390 84½
Balance due Hamburg on quarterly accounts for the fiscal year ending June 30, 1863	24,218 25½
Total balances against the United States	133,276 12½

Balance due the United States on adjustment of accounts with Prussia during the fiscal year ending June 30, 1863	$26,085 55
Balance due the United States on adjustment of accounts with Belgium for the year ending June 30, 1863	4,153 27
Total balances in favor of the United States	30,238 82

No. 5.

Additional articles to the articles agreed upon between the Post Office of the United States of America and the Post Office of the United Kingdom of Great Britain and Ireland, for carrying into execution the convention of December 15, 1848.

In pursuance of the power granted by article 21 of the convention of December 15, 1848, between the United States of America and the United Kingdom of Great Britain and Ireland to the two Post Offices to settle the matters of detail which are to be arranged by mutual consent for insuring the execution of the stipulations contained in the said convention, the undersigned, duly authorized for that purpose by their respective offices, have agreed upon the following articles:

ARTICLE I.

There shall be established on the part of the United States a new office of exchange at San Francisco, for the exchange of mails with the British offices of London, Liverpool, Southampton, Dublin, Cork, Galway, Londonderry, and Glasgow, by means of British, United States or Canadian mail packets plying between Liverpool, Southampton or Galway, and New York, Boston or Portland.

ARTICLE II.

The offices of London, Liverpool, Southampton, Dublin, Cork, Galway, Londonderry, and Glasgow, may despatch mails to San Francisco; but mails for the British exchanging offices shall not be despatched from San Francisco.

ARTICLE III.

The mails forwarded from the offices of London, Liverpool, Southampton, Dublin, Cork, Galway, Londonderry and Glasgow to San Francisco shall comprise the correspondence for California, Oregon, Washington Territory, the Sandwich islands, British Columbia and Vancouver's islands.

ARTICLE IV.

The present articles shall be considered as additional to those agreed upon between the two offices for carrying into execution the convention of December 15, 1848, signed at Washington the 14th May, 1849.

Done in duplicate, and signed at London on the twenty-sixth day of September, one thousand eight hundred and sixty-three, and at Washington on the nineteenth day of October, one thousand eight hundred and sixty-three.

M. BLAIR, *P. M. G., U. S.*
FREDERIC HILL.

Approved:
STANLEY, *of Alderly.*

No. 6.

Additional articles to the articles agreed upon between the Post Office of the United States of America and the Post Office of the United Kingdom of Great Britain and Ireland.

In pursuance of the power granted by article 21 of the convention of December 15, 1848, between the United States of America and the United Kingdom of Great Britain and Ireland to the two Post Offices to settle the matters of detail which are to be arranged by mutual consent for insuring the execution of the stipulations contained in the said convention, the undersigned, duly authorized for that purpose by their respective offices, have agreed upon the following articles:

ARTICLE I.

In exception to the stipulations contained in articles 9 and 12 of the convention of December 15, 1848, the payment to be made to the Post Office of the United Kingdom by the Post Office of the United States for the transit through the territory of the United Kingdom of letters and book packets, (including under the latter designation newspapers and printed papers of every kind,) comprised in the closed mails sent through the United Kingdom between the United States and any foreign country, whether conveyed between the United States and the United Kingdom by British or by United States packets, shall be at the rate of fourpence per ounce, British, of letters, net weight, and at the rate of fivepence per pound, British, of book packets, also net weight, and in like manner the payment to be made to the Post Office of the United States by the Post Office of the United Kingdom for the transit through the territory of the United States of letters and book packets, (including newspapers and printed papers of every kind,) comprised in the closed mails sent through the United States between the United Kingdom and any British colony or foreign country, whether conveyed between the United Kingdom and the United States by United States or by British packets, shall be at the rate of eight cents per ounce, British, of letters, net weight, and at the rate of ten cents per pound, British, of book packets, also net weight.

ARTICLE II.

It is understood and agreed that the reduced transit rates fixed by the preceding article to be paid to the United States Post Office by the British Post Office shall apply equally to closed mails between the United Kingdom and British Columbia or Vancouver's island, transmitted via the United States, whether forwarded overland or by way of Panama.

ARTICLE III.

The present articles shall be considered as additional to those agreed upon between the two offices for carrying into execution the convention of December 15, 1848, signed at Washington on the 14th of May, 1849, and they shall be carried into effect as soon as the British Post Office has announced to the United States Post Office that the negotiations now pending between the British Post Office and the German Post Offices, on the subject of a mutual exchange of closed mails, have been satisfactorily concluded.

Done in duplicate, and signed in London on the twenty-sixth day of December, one thousand eight hundred and sixty-two, and in Washington on the twelfth day of March, one thousand eight hundred and sixty-three.

ROWLAND HILL. [SEAL.]
M. BLAIR, [SEAL.]
Postmaster General.

No. 7.

POST OFFICE DEPARTMENT, CONTRACT OFFICE,
October 31, 1863.

SIR: For a statement of the mail service for the contract year ended June 30, 1863, I respectfully refer you to the tables hereto annexed.

Table A exhibits the character of the service, the length of routes, the number of miles of transportation, and the cost thereof, as it stood at the close of the contract year, in the States of Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Delaware, Maryland, Ohio, Western Virginia, Michigan, Indiana, Illinois, Wisconsin, Iowa, Missouri, Minnesota, Kentucky, California, Oregon, and Kansas, and the Territories of New Mexico, Utah, Nebraska, Washington, Colorado, and Dakota.

Table B exhibits the railroad service in operation on the 30th of June, 1863, and the cost per mile in each State.

Table C exhibits the steamboat service for the current year, as it stood on the 30th of September, 1863.

Table D exhibits the mail routes and service upon which the contractors were reported to be disloyal, and the new contractors to whom the routes were assigned.

I have the honor to be, very respectfully, your obedient servant,

E. L. CHILDS,
Acting Second Ass't P. M. General.

Hon. MONTGOMERY BLAIR,
Postmaster General.

No. 7—

Table of mail service in the following States and Territories for the year ended

[The entire service and pay is set down to the State under which it is numbered, though extend

States and Territories.	Length of routes.	ANNUAL TRANSPORTATION AND COST.					
		Certainty, celerity, and security.		By steamboat.		By railroad.	
	Miles.	*Miles.*	*Dollars.*	*Miles.*	*Dollars.*	*Miles.*	*Dollars.*
Maine	4,378	3,829	52,894			549	54,718
New Hampshire	1,864	1,393	17,829	60	1,650	411	35,921
Vermont	2,285	1,794	27,463			491	59,625
Massachusetts	2,716	1,174	27,409	240	7,800	1,302	162,357
Rhode Island	371	220	3,831	28	800	123	17,911
Connecticut	1,664	908	16,920			756	98,499
New York	10,545	7,346	125,831	175	6,813	3,024	345,922
New Jersey	2,215	1,574	30,042	59	4,038	582	66,386
Pennsylvania	13,326	11,260	179,775	85	6,375	1,981	191,147
Delaware	439	326	7,817			113	11,393
Maryland	2,918	2,052	47,408	36	589	830	183,608
Ohio	12,074	8,477	114,319	187	6,500	3,410	427,795
Virginia	2,003	1,634	25,641	369	22,480		
Michigan	7,525	5,503	57,992	1,017	19,976	1,005	114,741
Indiana	8,026	6,237	58,106			1,789	197,253
Illinois	9,826	7,059	101,060			2,767	263,147
Wisconsin	7,458	6,196	67,330	162	795	1,100	93,947
Iowa	9,126	8,259	134,481	228	7,404	639	39,960
Missouri	11,146	9,923	1,152,026	432	22,350	791	117,501
Minnesota	5,597	4,998	91,532	599	29,595		
Kentucky	6,532	5,534	103,804	532	25,700	466	52,100
California	5,231	4,924	246,182	284	45,500	23	4,640
Oregon	856	605	13,513	251	16,177		
Kansas	3,327	3,327	58,159				
New Mexico Territory	1,842	1,842	58,823				
Utah Territory	696	696	15,237				
Nebraska Territory	1,206	1,206	36,514				
Washington Territory	2,320	2,320	59,964				
Colorado Territory	1,703	1,703	42,172				
Dakota Territory	383	383	3,389				
Total	139,598	112,702	2,977,463	4,744	224,542	22,152	2,538,517
Route and local agents and mail messengers							

A.

June 30, 1863, *as exhibited by the state of the arrangements at the close of the year.*

ing into other States, instead of being divided among the States in which each portion of it lies.]

Total annual transportation by "certainty, celerity, and security."	Total annual transportation by steamboat.	Total annual transportation, by railroad.	Total annual transportation.	Total annual cost.	Remarks.
Miles.	*Miles.*	*Miles.*	*Miles.*	*Dollars.*	
1, 377, 600	....	404, 146	1, 781, 746	107, 612	
487, 032	28, 080	352. 248	867, 360	55, 400	
712, 868	....	420, 248	1, 133, 116	87, 088	
618, 579	149, 760	1, 444, 538	2, 212, 877	197, 566	
94, 328	34, 944	144, 144	273, 416	22, 542	
421, 642	....	789, 082	1, 210, 724	115, 419	
2, 937, 406	122, 370	4, 176, 160	7, 235, 936	478, 566	
634, 802	44, 304	641, 988	1, 321, 094	100, 466	
3, 441, 252	53, 040	1, 853, 854	5, 348, 146	377, 297	
125, 112	....	100, 900	226, 012	19, 210	
794, 906	11, 232	1, 261, 562	2, 067, 700	231, 605	The Baltimore, Wilmington, and Philadelphia railroad is under a Maryland number.
2, 189, 902	78, 312	3, 088, 884	5, 357, 098	548, 614	
379, 836	172, 926	....	552, 762	48, 121	Refers to service in Western Virginia alone. Includes 124 miles of coach service.
1, 193, 631	244, 989	1, 073, 962	2, 512, 582	192, 709	
1, 369, 532	....	1, 761, 590	3, 131, 122	255, 359	
1, 796, 305	....	2, 448, 108	4, 244, 413	364, 207	
1, 331, 398	57, 226	1, 174, 804	2, 563, 428	162, 072	
2, 181, 530	94, 848	598, 390	2, 874, 768	181, 845	
3, 124, 444	138, 112	727, 715	3, 990, 271	1, 291, 877	Includes $1,000,000 for the "great overland mail."
1, 116, 617	261, 118	....	1, 377, 735	121, 127	
1, 458, 681	263, 702	380, 282	2, 102, 665	181, 604	Includes steamboat service from Louisville to Cincinnati.
1, 554, 835	177, 216	28, 953	1, 761, 004	296, 322	
80, 392	72, 592	....	152, 984	29, 690	
750, 880	....	....	750, 880	58, 159	
188, 448	....	....	188, 448	58, 823	
94, 848	....	....	94, 848	15, 237	
413, 712	....	....	413, 712	36, 514	
224, 368	....	....	224, 368	59, 964	
199, 576	....	....	199, 576	42, 172	
55, 224	....	....	55, 224	3, 389	
31, 349, 686	2, 004, 771	22, 871, 558	56, 226. 015	5, 740, 576	
....	....	....	....	496, 046	
				6, 236, 622	

E. L. CHILDS,
Acting Second Assistant Postmaster General.

No. 7—B.

Railroad service as in operation on the 30th of June, 1863.

Number of route.	Termini.	Corporate title of company carrying the mail.	Distance.	Total distance in each State.	Number of trips per week.	Annual pay.	Annual pay in each State.	Annual cost per mile on each route.	Remarks.
	MAINE.		*Miles.*	*Miles.*		*Dollars.*	*Dollars.*	*Dollars.*	
2	Augusta to Skowhegan	Somerset and Kennebec	39		6	3,343 00		85 71	
88a	Calais to Princeton	Lewy's Island	22		6	350 00		15 90	
116	Portland to Portsmouth	Portland, Saco, and Portsmouth	52		12	7,837 50		150 72	
117	Portland to Augusta, with branch, Brunswick to Bath.	Kennebec and Portland	73		6	7,300 00		100 00	
118	Portland to Canada Line	Grand Trunk	48 117		12 6	6,000 00 11,700 00		125 00 100 00	
119	Portland to Bar Mills	York and Cumberland	18		6	900 00		50 00	
138	Danville Junction to Bangor	Maine Central	110		6	13,750 00		125 00	
154	Farmington to Brunswick	Androscoggin	70½		6	3,537 50		50 00	
				549½			54,718 00		
	NEW HAMPSHIRE.								
251	Concord to Nashua	Concord	36		12	5,400 00		150 00	
252	Concord to Portsmouth	Concord, Manchester, and Lawrence	48		12	2,400 00		50 00	
253	Concord to Wells River	Boston, Concord, and Montreal	93		6	10,000 00		107 52	
254	Concord to White River Junction	Northern	69		12	10,196 25		125 00	
	Branch, Franklin to Bristol	do	13		6			50 00	
255	Concord to Bradford	Merrimack and Connecticut River	26		6	1,500 00		57 69	
263	Contocook Village to Hillsboro' Bridge	Contocook River	15		6	750 00		50 00	
266	Manchester to North Weare	Concord, Manchester, and Lawrence	20½		6	1,025 00		50 00	
277	Nashua to Wilton	Boston and Lowell and Lowell and Nashua	16		6	900 00		56 25	
309	Dover to Alton	Cocheco	28		6	1,400 00		50 00	
310	Brock's Crossings to Union	Great Falls and Conway	26		6	1,300 00		50 00	Runs into Portsmouth without compensation.
333	Littleton to Wells River	Boston, Concord, and Montreal	21		6	1,050 00		50 00	
				411½			35,921 25		
	VERMONT.								
411	Burlington to Rouse's Point	Vermont Central and Vermont and Canada	55½		12	8,325 00		150 00	
449	White River Junction to Barton	Connecticut and Passumpsic River	91		6	9,100 00		100 00	
458	Windsor to Burlington	Vermont Central	119		12	14,875 00		125 00	

474	Rutland to North Bennington, with branch to Bennington.	Troy and Boston	57		6	5,700 00		100 00	
480	Bellows Falls to Windsor	Sullivan	25		6	3,125 00		125 00	
481	Bellows Falls to Burlington	Rutland and Burlington	119½		6	15,500 00		129 70	
487	Brattleboro' to Bellows Falls	Vermont Valley	24		12	3,000 00		125 00	
				491			59,625 00		
	MASSACHUSETTS.								
601	Boston to Portsmouth	Eastern	56		12	8,324 00		148 64	
602	Boston to South Berwick Junction, Me.	Boston and Maine	75		12	11,400 00		150 00	
	Branch, Rollingsford to Great Falls	do	3		6			50 00	
603	Boston to Nashua	Boston and Lowell and Nashua and Lowell	42		18	6,300 00		150 00	
604	Boston to Fitchburg	Fitchburg	52		12	8,000 00		153 84	
605	Boston to Worcester	Boston and Worcester	46		18	13,800 00		300 00	
606	Boston to East Medway	do	24.84		6	1,242 00		50 00	
607	Boston to Blackstone	James W. Converse	35		6	2,607 00		74 48	
608	Boston to Providence	Boston and Providence	46		19	8,625 00		187 50	$1,725 of this is for conveyance of the night mail *via* the Shore Line.
609	Boston to Plymouth	Old Colony and Fall River	37½		12	5,400 00		144 00	
610	Boston to Medford	Boston and Maine	5½		6	275 00		50 00	
613	Boston to Watertown	Union	3¼ 3¼		18 12	800 00		114 28	
615	Boston to Mattapan	Dorchester and Milton Branch	8½		6	425 00		50 00	
616	Boston to West Lynn Depot	Eastern	10		12	500 00		50 00	
617	Boston to Dedham	Boston and Providence	11		12	550 00		50 00	
618	Boston to Lowell	Boston and Lowell and Nashua and Lowell	24		6	1,200 00		50 00	
619	Boston to Gloucester	Eastern	16		12	800 00		50 00	
620	Boston to Marblehead	do	4		6	200 00		50 00	
628	Lawrence to Manchester	Concord, Manchester, and Lawrence	28		12	2,800 00		100 00	
630	Lowell to Lawrence	Boston and Lowell and Nashua and Lowell	14		12	1,050 00		75 00	
632	Winchester to Woburn	do	3		6	150 00		50 00	
633	Porter's to Lexington	Lexington and West Cambridge	8		12	409 00		51 12½	
634	Lexington Depot to Bedford	do	4		6	165 00		41 25	
636	South Acton Depot to Feltonville	Fitchburg	9		6	500 00		55 56	
637	Groton Junction to Lowell	Boston and Lowell and Nashua and Lowell	17		6	900 00		52 94	
638	Groton Junction to Mason Village	Fitchburg	23		6	1,500 00		65 22	
639	Auburndale Station to Newton Lower Falls	Boston and Worcester	2		6	100 00		50 00	
640	Natick to Saxonville	do	4		6	200 00		50 00	
641	South Framingham to Northboro'	do	15		6	750 00		50 00	
642	South Framingham to Milford	do	12		6	600 00		50 00	
645	Grafton to Millbury	do	5		6	250 00		50 00	
657	South Braintree Junction to Fall River	Old Colony and Fall River	42		12	5,100 00		121 42	
658	South Abington to Bridgewater	do	8		6	250 00		31 25	
659	Braintree Depot to Cohasset	South Shore	12		12	900 00		75 00	
665	Middleboro' to Hyannis	Cape Cod	47		12	5,500 00		117 02	
675	New Bedford to West Wareham	New Bedford and Taunton	16½		6	1,700 00		104 61	
679	Taunton to Middleboro'	Middleboro' and Taunton	9½		6	600 00		63 15	
680	Taunton to Mansfield Junction	Taunton Branch	12		18½	1,200 00		100 00	
681	Taunton to New Bedford	New Bedford and Taunton	20½		18½	2,625 00		128 04	
690	Hebronville to East Providence	Boston and Providence	8		6	400 00		50 00	

No. 7—B.—*Railroad service as in operation on the 30th of June*, 1863—Continued.

Number of route.	Termini.	Corporate title of company carrying the mail.	Distance.	Total distance in each State.	Number of trips per week.	Annual pay.	Annual pay in each State.	Annual cost per mile on each route.	Remarks.
	MASSACHUSETTS—Continued.		*Miles.*	*Miles.*		*Dollars.*	*Dollars.*	*Dollars.*	
691	Worcester to Nashua	Worcester and Nashua	46½	....	6	4,625 00	....	100 00	
692	Worcester to Albany	Western	55 103	....	12 12	13,750 00 20,600 00	....	250 00 200 00	
695	Sterling Junction to Fitchburg	Fitchburg and Worcester	14	....	12	1,400 00	....	100 00	
696	Fitchburg to Bellows Falls	Cheshire	64	....	6	7,500 00	....	117 18	
697	Fitchburg to Brattleboro'	Vermont and Massachusetts	69¾	....	6	6,000 00	....	77 17	
	Branch, Grout's Corners to Greenfield	do	8	....	6				
703	Palmer to Amherst	Amherst and Belchertown	20	....	6	1,060 00	....	53 00	
709	Springfield to South Vernon Junction	Connecticut River	50	....	12	6,250 00	....	125 00	
709*a*	South Vernon Junction to Keene	Cheshire	24	....	6	1,200 00	....	50 00	
719	Springfield to Chicopee Falls	Connecticut River	6	....	12	300 00	....	50 00	
727	Pittsfield to North Adams	Pittsfield and North Adams	21	....	6	1,575 00	....	75 00	
				1,303½			162,357 00		
	RHODE ISLAND.								
901	Providence to Worcester, Mass	Providence and Worcester	44	....	12	5,900 00	....	134 09	
902	Providence to New London, Conn	Stonington and Providence	63¾	....	19	11,156 25	....	175 00	Carries the Boston and New York night mail.
903	Providence to Bristol	Providence, Warren, and Bristol	15½	....	6	855 00	....	55 16	
				123¼			17,911 25		
	CONNECTICUT.								
925	New London to Worcester, Mass	Norwich and Worcester	73	....	12	8,030 00	....	110 00	
927	New London to Palmer	New London and Northern	13 17 36	....	12 12 6	.... 5,725 00	....	100 00 75 00 75 00	
935	Middletown to Berlin Depot	Hartford and New Haven	10	....	12	1,000 00	....	100 00	
939	New Haven to New London	New Haven, New London, and Stonington	50	....	19	10,000 00	....	200 00	Do.
940	New Haven to Springfield	Hartford and New Haven	63 5-6	....	12	15,958 33	....	250 00	
941	New Haven to Granby, with branch from Farmington to Collinsville.	New York and New Haven	54½	....	12	4,075 00	....	75 00	
941*a*	Granby to Northampton	New Haven and Northampton	32	....	6	2,400 00	....	75 00	
942	New Haven to New York	New York and New Haven	76½	....	19	28,625 00	....	375 00	Do.
944	Bridgeport to Winstead	Naugatuck	62	....	12	4,650 00	....	75 00	

945	Bridgeport to State Line, with a branch from Van Dusenville to Pittsfield.	Housatonic	98 23		6 6	7,186 00		59 38	
947	South Norwalk to Danbury	Danby and Norwalk	23½		6	2,000 00		85 10	
958	Waterbury to Providence	Hartford, Providence, and Fishkill	124		6	9,300 00		75 00	
				756			98,499 33		
	NEW YORK.								
1001	New York to Dunkirk	Erie Railway	460		19	92,000 00		200 00	
1002	New York to Albany	Hudson River	144		19	32,400 00		225 00	
1003	New York to Chatham Four Corners	New York and Harlem	130½		6	6,525 00		50 00	
1004	New York to Flushing	Flushing	11		6	600 00		54 54	
1007	Stapleton to Tottenville	Staten Island	13		12	1,000 00		76 92	
1008	Brooklyn to Greenport	Long Island	65 33		12 6	8,225 00		83 93	$1,500 of this is for mail messenger service.
1026	Sufferns to Piermont	Erie Railway	18		6	772 00		42 88	
1032	Newburg to Chester	do	19		6	814 00		42 84	
1062	Hudson to West Stockbridge	Hudson and Boston	35		12	1,750 00		50 00	
1073	Albany to Buffalo	New York Central	298		25	51,600 00		200 00	On 80 miles of this route the pay is but $100 a mile.
1074	Albany to Junction	Rensselaer and Saratoga	12		12	1,029 00		85 75	
1075	Albany to Troy	Troy and Greenbush	7		19	1,050 00		150 00	
1082	Schenectady to Ballston	Rensselaer and Saratoga	16		6	800 00		50 00	
1084	Troy to Schenectady	New York Central	22		12	1,650 00		75 00	
1085	Troy to North Bennington	Troy and Boston	32½		12	3,250 00		100 00	
1086	Troy to Saratoga Springs	Rensselaer and Saratoga	32.81		12	3,281 00		100 00	
1093	Eagle Bridge to Rutland	Rutland and Washington	62½		12	6,250 00		100 00	
1094	Eagle Bridge to North Adams	Troy and Boston	25½		6	1,912 50		75 00	
1099	Saratoga Springs to Castleton, Vt.	Saratoga and Whitehall	54		12	5,400 00		100 00	
1122	Plattsburg to Canada Line	Plattsburg and Montreal	23		6	986 00		42 86	
1123	Rouse's Point to Ogdensburg	Northern, (Ogdensburg)	119		12	10,710 00		90 00	
1124	Rouse's Point to Canada Line	Champlain and St. Lawrence	2¼		6	262 50		116 66	
1144	Watertown to North Potsdam	Rome, Watertown, and Ogdensburg	76		12	3,800 00		50 00	
	Branch to Ogdensburg	do	19		12	975 00		50 00	
1191	Utica to Boonville	Black River and Utica	35		6	1,750 00		50 00	
1199	Rome to Cape Vincent	Rome, Watertown, and Ogdensburg	73 24		12 6	8,329 00		85 86	
1217	Syracuse to Rochester	New York Central	104		12	20,800 00		200 00	
1218	Syracuse to Binghamton	Syracuse and Binghamton	80		12	6,000 00		75 00	
1219	Syracuse to Oswego	Oswego and Syracuse	35½		12	3,043 00		85 72	
1257	Canandaigua to Niagara Falls	New York Central	50 47		12 6	6,100 00		62 89	
1258	Canandaigua to Elmira	Erie Railway	68½		12	5,137 50		75 00	
1262	Rochester to Niagara Falls	New York Central	76		12	11,400 00		150 00	
1263	Rochester to Avon	Erie Railway	18		6	800 00		44 44	
1266	Avon to Mount Morris	Buffalo, New York, and Erie	10 6		12 6	800 00		50 00	
1282	Batavia to Attica	New York Central	11		6	550 00		50 00	
1298	Suspension Bridge to Detroit	Great Western, (of Canada)	229		6	11,450 00		50 00	
1299	Buffalo to Lockport	New York Central	22		12	1,100 00		50 00	
1300	Buffalo to Lewiston	do	29		6	1,400 00		50 00	

No. 7—B.—*Railroad service as in operation on the 30th of June,* 1863—Continued.

Number of route.	Termini.	Corporate title of company carrying the mail.	Distance.	Total distance in each State.	Number of trips per week.	Annual pay.	Annual pay in each State.	Annual cost per mile on each route.	Remarks.
	NEW YORK—Continued.		*Miles.*	*Miles.*		*Dollars.*	*Dollars.*	*Dollars.*	
1301	Attica to Hornellsville	Erie Railway	60	....	6	3,400 00	....	56 67	
1302	Buffalo to State Line	Buffalo and State Line	69	....	19	13,800 00	....	200 00	
1354	Buffalo to Corning	Erie Railway	142	....	12	8,520 00	....	60 00	
1359	Owega to Ithaca	Delaware, Lackawanna, and Western	33	....	12	1,415 00	....	42 86	This service forms part of a steamboat route.
1424	Chesterville to Warwick	Warwick Valley	11	....	12	400 00	....	36 36	
1477	Salamanca to Corry	Atlantic and Great Western	61½	....	6	2,636 00	....	42 86	
				3,024.56			345,922 50		
	NEW JERSEY.								
2002	New York to Hackettstown	Morris and Essex	63	....	12	6,600 00	....	104 76	
2003	New York to Easton	Central, of New Jersey	64	....	12	6,400 00	....	100 00	
2004	New York to New Brunswick	New Jersey R. R. and Transportation	36	....	19	13,500 00	....	375 00	Includes $2,700, being 25 per cent. on $300 a mile for night service, and a third extra trip.
2015	New Brunswick to Philadelphia	Philadelphia and Trenton	54	....	19	20,250 00	....	375 00	Includes $4,050, being 25 per cent. on $300 a mile for night service, and a third extra trip.
2026	Waterloo to Newton	Sussex	11	....	12	550 00	....	50 00	
2051	Trenton to Belvidere	Belvidere and Delaware	64	....	12	3,850 00	....	50 00	
	Branch to Flemington	......do	13	....	6				
2065	Philadelphia to South Amboy	Camden and Amboy	66	....	6	7,462 00	....	103 63	
	Branch, Bordentown to Trenton	......do	6	....	6				
2075	Camden to Atlantic City	Camden and Atlantic	60	....	......	3,000 00	....	50 00	12 trips a week 4 months; 6 trips a week 8 months.
2078	Burlington to Pemberton	Burlington and Mount Holly	14	....	12	700 00	....	50 00	
2086	Jamesburg to Freehold	Freehold, Jamesburg, and Agricultural	11	....	6	572 00	....	52 00	
2098	New York to Piermont	Northern, of New Jersey	26½	....	6	1,124 00	....	42 41	Mail messenger service performed by railroad company.
2099	Port Monmouth to Jackson	Raritan and Delaware Bay	73¾	....	6	2,000 00	....	50 00	38¾ miles of this service is performed by the contractors without cost to the department.
	Branch to Long Branch	(S. W. and W. A. Torry, contractors)	5	....	6				
2100	New York to Hackensack	Hackensack and New York	15	....	12	378 00	....	25 20	
				582¼			66,386 00		

PENNSYLVANIA.

2201	Philadelphia to Pittsburg	Pennsylvania	357¼		14	71,525 00		280 80	
2202	Philadelphia to Pottsville	Philadelphia and Reading	97		12	14,218 00		146 58	
2203	Philadelphia to Westchester	Westchester and Philadelphia	29¼		12	1,463 00		50 00	
2204	Philadelphia to Bethlehem	North Pennsylvania	54. 19		6	2,756 00		42 86	
	Branch to Doylestown	do	10. 11						
2207	Philadelphia to Norristown	Philadelphia, Germantown, and Norristown.	17		6	500 00		29 41	
2210	Philadelphia to Darby	Philadelphia and Darby	8		6	400 00		50 00	
2243	Lancaster to Middletown	Pennsylvania	32¼		6	1,490 00		45 84	
2244	Strasburg to Leaman Place	Strasburg, (Herr & Girvin, contractors)	5		6	215 00		43 00	
2254	Reading to Harrisburg	Philadelphia and Reading	54		6	5,400 00		100 00	
2264	Port Clinton to Williamsport	Catawissa	119		12	11,900 00		100 00	
2307	Sunbury to Mount Carmel	Northern Central	28		6	1,400 00		50 00	
2312	Easton to Mauch Chunk	Lehigh Valley	46		6	2,300 00		50 00	
2325	Allentown to Reading	East Pennsylvania	36		6	1,800 00		50 00	
2326	Mauch Chunk to Jeansville	Beaver Meadow	23		6	1,150 00		50 00	
2347	Scranton to Northumberland	Lackawanna and Bloomsburg	17		12	4,500 00		56 24	
			63. 10		6				
2364	Great Bend to New Hampton	Delaware, Lackawanna, and Western	133		6	9,975 00		75 00	
2401	York to Columbia	Northern Central	13		7	650 00		50 00	
2404	Harrisburg to Auburn	Schuylkill and Susquehanna	59		6	1,770 00		30 00	
2408	Harrisburg to Chambersburg	Cumberland Valley	52		12	5,200 00		100 00	
2428	Hanover Junction to Hanover	Hanover Branch	13		6	1,050 00		50 00	
	Branch to Littlestown	do	8		6				
2428a	Hanover to Gettysburg	Gettysburg	17½		6	862 50		50 00	
2457	Sunbury to Williamsport	Pennsylvania, (lessees of Philadelphia and Erie.)	40		14	6,000 00		150 00	
2475	Williamsport to Elmira	Northern Central	77		12	11,500 00		150 00	
2476	Williamsport to Lock Haven	Penn'a, (lessees of Philad'a and Erie)	26¼		6	1,325 00		50 00	
2489	Blossburg to Corning	Tioga	40		6	2,000 00		50 00	
2519	Huntingdon to Hopewell	Huntingdon and Broad Top	31		6	1,800 00		50 00	
	Branch to Dudley	do	5. 32		6				
2524	Altona to Hollidaysburg	Pennsylvania	10		7	500 00		50 00	
2557	Blairsville to Indiana	do	20		6	1,000 00		50 00	
2566a	Connellsville to Uniontown	Fayette County	13		6	650 00		50 00	
2642	Pittsburg to Connellsville	Pittsburg and Connellsville	60		6	3,000 00		50 00	
2644	Pittsburg to Kittaning	Alleghany Valley	43		6	3,150 00		73 25	
2649	Washington to Wheeling	Hempfield	32¼		6	3,234 00		100 00	
2693	Northville to Erie	Erie and North East	20		14	4,000 00		200 00	
2707	Girard to Jamestown	Erie and Pittsburg, (Battles & Hinds, contractors.)	48		6	2,745 00		58 40	Includes $1,065 for mail messengers and route agent furnished by the contractors.
2726	Erie to Warren	Penn'a, (lessees of Philad'a and Erie)	66		6	3,300 00		50 00	
2730	Bridgeport to Downington	Philadelphia and Reading	22		6	200 00		9 09	
2772	Cresson to Ebensburg	Ebensburg and Cresson	12		12	500 00		41 66	
2773	Chambersburg to Hagerstown	Cumberland Valley, (lessees of Franklin)	22		6	1,100 00		50 00	
2811	Corry to Titusville	Oil Creek	27		6	1,157 00		42 86	
2812	Corry to Meadville	Atlantic and Great Western	41		6	1,757 00		42 86	
2813	Lenni Mills to Oxford	Philadelphia and Baltimore Central	33		12	1,650 00		50 00	
				1,981			191,147 50		

No. 7—B.—*Railroad service as in operation on the 30th of June,* 1863—Continued.

Number of route.	Termini.	Corporate title of company carrying the mail.	Distance.	Total distance in each State.	Number of trips per week.	Annual pay.	Annual pay in each State.	Annual cost per mile on each route.	Remarks.
	DELAWARE.		*Miles.*	*Miles.*		*Dollars.*	*Dollars.*	*Dollars.*	
3101	Wilmington to Saulsbury	Philadelphia, Wilmington, and Baltim'e	48.48		12	10,943 76		125 00	Includes $1,400 for daily mail to Philadelphia.
			55.74		6			62 50	
3111	Harrington to Milford	Junction and Breakwater	9		6	450 00		50 00	
				113.22			11,393 76		
	MARYLAND.								
3201	Baltimore to Philadelphia	Philadelphia, Wilmington, and Baltimore.	102		19	37,500 00		300 00	Includes $6,900 for ferry at night and accommodations for agents on night trains.
3204	Baltimore to Sunbury	Northern Central	86		14	25,450 00		200 00	
			55		14			150 00	
3207	Baltimore to Wheeling	Baltimore and Ohio	179		19	93,900 00		300 00	Service on this route has been very irregular since the war.
			201		13			200 00	
3208	Baltimore to Washington	do	40		26	12,000 00		300 00	
3264	Monocacy Bridge to Frederick	do	3		7	300 00		100 00	
3281	Grafton to Parkersburg	do	104		6	10,400 00		100 00	
3286	Annapolis to Annapolis Junction	Annapolis and Elk Ridge	20		13	2,858 00		142 90	
3310	Intersection with Northern Central Railway (3204) to Union Bridge.	Western Maryland	40		6	1,200 00		30 00	
				830			183,608 00		
	OHIO.								
9004	Bell Air to Columbus	Central Ohio	137⅞		14	27,575 00		200 00	
9005	Steubenville to Newark	Steubenville and Indiana	116		6	8,700 00		75 00	
9009	Means to Cadiz	do	8		6	240 00		30 00	
9051	Pittsburg to Chicago	Pittsburg, Fort Wayne, and Chicago	469¼		12	93,900 00		200 00	
9052	Pittsburg to Bell Air	Cleveland and Pittsburg	95		6	7,125 00		75 00	
9095	Erie to Cleveland	Cleveland, Painesville, and Ashtabula	96		13	21,600 00		225 00	
9102	Cleveland to Wellsville	Cleveland and Pittsburg	59¾		12	13,087 50		150 00	
			41¼		6			100 00	
9103	Cleveland to Sandusky	Cleveland and Toledo	61		6	3,050 00		50 00	
9104	Cleveland to Youngstown	Cleveland and Mahoning	67		6	3,350 00		50 00	
9114	Hudson to Millersburg	Cleveland, Zanesville, and Cincinnati	62		6	1,860 00		30 00	
9120	Bayard to New Philadelphia	Cleveland and Pittsburg	32		6	1,372 00		42 86	

9121	Oneida Mills to Carrollton	Carrollton and Oneida	12		6	384 00		32 00	
9146	Sandusky to Newark	Sandusky, Mansfield, and Newark	124		6	12,400 00		100 00	
9172	Columbus to Cleveland	Cleveland, Columbus, and Cincinnati	138		13	29,100 00		210 86	
9178	Columbus to Xenia	Columbus and Xenia	55		13	12,375 00		225 00	
9179	Columbus to Union City	Columbus, Piqua, and Indiana	103¾		6	7,762 50		75 00	
9191	Galion to Union City	Bellefontaine and Indiana	119		12	17,850 00		150 00	
9229	Portsmouth to Reed's Mills	Scioto and Hocking Valley	56		6	2,800 00		50 00	
9273	Toledo to Cleveland	Cleveland and Toledo	114		12	22,800 00		200 00	
9274	Toledo to State Line	Toledo and Wabash	243		6	24,300 00		100 00	
9275	Toledo to Elkhart	Michigan Southern and Northern Indiana	133		6	6,650 00		50 00	
9302	Hamilton to Richmond	Eaton and Hamilton	48		6	3,600 00		75 00	
9303	Cincinnati to Dayton	Cincinnati, Hamilton, and Dayton	25		12	10,875 00		225 00	
			35		12			150 00	
9306	Cincinnati to Springfield	Little Miami	19		6	16,525 00		100 00	
			65		13			225 00	
9310	Cincinnati to Parkersburg	Marietta and Cincinnati	197		6	20,150 00		100 00	
			9		6			50 00	
9325	Blanchester to Hillsboro'	do	21		6	787 50		37 50	
9328	Morrow to Zanesville	Cincinnati, Wilmington, and Zanesville	133		6	9,975 00		75 00	
9329	Xenia to Dayton	Columbus and Xenia	17		12	2,125 00		125 00	
9373	Dayton to Union City	Greenville and Miami	48		6	2,400 00		50 00	
9375	Dayton to Toledo	Dayton and Michigan	149		12	22,350 00		150 00	
9393	Springfield to Sandusky	Sandusky, Dayton, and Cincinnati	132		6	13,200 00		100 00	
9394	Springfield to Delaware	Springfield, Delaware, and Lakeville	50		6	2,143 00		42 86	
9396	Springfield to Dayton	Sandusky, Dayton, and Cincinnati	24		6	2,400 00		100 00	
9399	Carey to Finley	do	16		6	480 00		30 00	
9411	Fremont to Finley	Fremont and Indiana	37		6	740 00		20 00	
9300a	Hamilton to Connersville	Cincinnati and Indianapolis Junction	42		6	1,764 00		42 00	
				3,409¼			427,795 50		
	MICHIGAN.								
12501	Toledo to Chicago	Michigan Southern and Northern Indiana	242		12	36,300 00		150 00	
12502	Toledo to Detroit	do	65			6,500 00		100 00	Six times a week, or as much oftener as the trains may run.
12503	White Pigeon to Three Rivers	do	13			416 00		32 00	Do.
12504	Monroe to Adrian	do	36			1,800 00		50 00	Do.
12505	Adrian to Jackson	do	46			2,300 00		50 00	Do.
12506	Detroit to Chicago	Michigan Central	285¼		12	42,787 50		150 00	
12507	Detroit to Grand Haven	Detroit and Milwaukie	189		12	18,900 00		100 00	
12508	Detroit to Port Huron	Detroit and Port Huron	64½			3,212 50		50 00	Do.
12720	Saginaw to Flint	Flint and Pere Marquette	36¼		6	1,825 00		50 00	
12746	Owasso to Lansing	Amboy, Lansing, and Traverse Bay	28		6	700 00		25 00	
				1,005			114,741 00		
	INDIANA.								
12001	Indianapolis to Lafayette	Lafayette and Indianapolis	65¼		12	9,843 75		150 00	
12003	Indianapolis to Peru	Peru and Indianapolis	78		6	3,900 00		50 00	
12004	Union City to Indianapolis	Indianapolis, Pittsburg, and Cleveland	85		12	10,625 00		125 00	
12005	Indianapolis to Dayton	Indiana Central	110½		12	13,812 50		125 00	
12007	Indianapolis to Cincinnati	Indianapolis and Cincinnati	113½		12	14,187 50		125 00	
12008	Indianapolis to Madison	Indianapolis and Madison	87		6	4,350 00		50 00	
12010	Indianapolis to Terre Haute	Terre Haute and Richmond	73		12	9,125 00		125 00	
12013	Jeffersonville to Indianapolis	Jeffersonville	50		12	9,350 00		100 00	
			58		12			75 00	

No. 7—B.—*Railroad service as in operation on the 30th of June*, 1863—Continued.

Number of route.	Termini.	Corporate title of company carrying the mail.	Distance.	Total distance in each State.	Number of trips per week.	Annual pay.	Annual pay in each State.	Annual cost per mile on each route.	Remarks.
	INDIANA—Continued.		*Miles.*	*Miles.*		*Dollars.*	*Dollars.*	*Dollars.*	
12046	Rushville to Columbus	Indianapolis and Madison	46		6	1,840 00		40 00	
12051	Richmond to Logansport	Cincinnati and Chicago Air Line	108		6	8,100 00		75 00	
12090	Cincinnati to Illinoistown	Ohio and Mississippi	341		13	68,200 00		200 00	
12105	New Albany to Michigan City	New Albany and Salem	137		6	25,920 00		90 00	
			151		12				
12159	Evansville to Rockville	Evansville and Crawfordsville	23		6	9,400 00		50 00	
			110		6			75 00	
12199	Logansport to Valparaiso	Cincinnati and Chicago Air Line	62		6	4,650 00		75 00	
12257	State Line to Logansport	Toledo, Logansport, and Burlington	61		6	3,050 00		50 00	
12261	Plymouth to La Porte	Cincinnati, Peru, and Chicago	30		6	900 00		30 00	
				1,789¼			197,253 75		
	ILLINOIS.								
11501	Chicago to Milwaukie	Chicago and Milwaukie and Milwaukie and Chicago.	87		12	8,700 00		100 00	
11502	Chicago to Freeport	Galena and Chicago Union	121		12	12,100 00		100 00	
11503	Chicago to Clinton	do	138			13,800 00		100 00	Six times a week, or as much oftener as the trains may run.
11504	Chicago to Davenport	Chicago and Rock Island	183		12	18,300 00		100 00	
11505	Chicago to Burlington	Chicago, Burlington, and Quincy	211		12	21,100 00		100 00	
11506	Chicago to St. Louis	Chicago and Alton	284½			28,475 00		100 00	Do.
11507	Chicago to Centralia	Illinois Central	253			42,100 00		100 00	Do.
	Centralia to Cairo	do	112		12			150 00	
11508	Joliet to Lake Station	Michigan Central	45			2,250 00		50 00	Do.
11510	Elgin to Richmond	Elgin and State Line	33			1,650 00		50 00	Do.
11511	Belvidere to Magnolia	Galena and Chicago Union	40			2,000 00		50 00	Do.
11512	Dunleith to Centralia	Illinois Central	342		12	34,200 00		100 00	
11513	Bureau Junction to Peoria	Chicago and Rock Island	47			2,350 00		50 00	Do.
11514	Peoria to Gilman	Logansport, Peoria, and Burlington	86			9,850 00		100 00	Do.
	Gilman to State Line	do	25					50 00	Do.
11515	Peoria to Galesburg	Chicago, Burlington, and Quincy	54			5,400 00		100 00	Do.
11517	Galesburg to Quincy	do	100		12	10,000 00		100 00	
11518	Pekin to Virginia	Illinois River	61			2,047 50		33 56	Do.
11519	State Line, Ind., to Meredosia	Great Western	182			18,290 00		100 00	Do.
11520	Quincy to Meredosia	Quincy and Toledo	58			5,800 00		100 00	Do.
11521	Terre Haute, Ind., to St. Louis, Mo	St. Louis, Alton, and Terre Haute	192			19,200 00		100 00	Do.
11559	Courtland Station to Sycamore	Sycamore and Courtland	5		6	250 00		50 00	
11729	Lewistown to Yates City	Chicago, Burlington, and Quincy	31		6	1,550 00		50 00	
11886	Jacksonville to White Hall	Jacksonville, Alton, and St. Louis	24½		6	1,225 00		50 00	

11917	Carthage to Warsaw	Mississippi and Wabash	21½			1,075 00		50 00	Do.
11919	Clayton to Carthage	Illinois and Southern Iowa	30½			1,525 00		50 00	Do.
				2,767½			263,147 50		
	WISCONSIN.								
13001	Chicago to Green Bay	Chicago and Northwestern	244		12	24,400 00		100 00	
13002	Kenosha to Rockford	Kenosha, Rockford, and Rock Island	72		6	3,600 00		50 00	
13003	Racine to Savannah	Farmers' Loan and Trust Company	143		12	14,300 00		100 00	
13004	Milton to Monroe	Milwaukie and Prairie du Chien	43.70		6	2,185 00		50 00	
13005	Warren, Ill., to Mineral Point, Wis	Mineral Point	33		6	1,650 00		50 00	
13006	Milwaukie to Prairie du Chien	Milwaukie and Prairie du Chien	194		12	19,400 00		100 00	
13007	Milwaukie to Columbus	Milwaukie and Western	65		6	3,262 50		50 00	
13008	Milwaukie to La Crosse	La Crosse and Milwaukie	20½		12	20,150 00		100 00	
13009	Horicon to Berlin	Milwaukie and Horicon	43		6	2,150 00		50 00	
13010	Ripon to Winneeconnee	Ripon and Wolf River	16		6	600 00		37 50	
13041 (part.)	Sheboygan to Glenbeulah	Sheboygan and Fond du Lac	20		6	1,000 00		50 00	
13187	Watertown to Sun Prairie	Milwaukie and Western	25		6	1,250 00		50 00	
				1,100.20			93,947 50		
	IOWA.								
10901	Keokuk to Eddyville	Keokuk, Fort des Moines, and Minnesota	92½		12	6,937 50		75 00	
10902	Keokuk to Fort Madison	Keokuk, Mt. Pleasant, and Muscatine	25		6	1,250 00		50 00	
10926	Burlington to Ottumwa	Burlington and Missouri River	76		12	5,700 00		75 00	
10940	Muscatine to Washington	Chicago and Rock Island	40		6	2,000 00		50 00	Old pay. New pay from July 1, 1862, not yet arranged.
10942	Davenport to Marengo, and branch	do	99.20		6	4,960 00		50 00	Do.
10954	Clinton to Cedar Rapids	Chicago, Iowa, and Nebraska	82		12	6,150 00		75 00	
10961a	Cedar Rapids to Marshalltown	do	69		12	5,175 00		75 00	
10971	Dubuque to Cedar Falls	Dubuque and Sioux City	100		6	5,000 00		50 00	
10972	Farley to Cedar Rapids	Dubuque, Marion, and Western	55.761		6	2,788 00		50 00	
				639.461			39,960 50		
	MISSOURI.								
10401	St. Louis to Dresden	Pacific	195.82		7	29,373 00		150 00	Twice daily when trains so run.
10402	St. Louis to Macon City	North Missouri	170		12	25,500 00		150 00	
10403	St. Louis to Pilot Knob	St. Louis and Iron Mountain	87.10		7	8,710 00		100 00	
			4		7	200 00		50 00	
10429	Pacific to Rolla	Pacific	76¼		6	5,718 75		75 00	
10463	Quincy to St. Joseph	Hannibal and St. Joseph	222		14	44,400 00		200 00	
10524	St. Joseph to Weston	Platte County	36		6	3,600 00		100 00	
				791.17			117,501 75		
	KENTUCKY.								
9504	Louisville to Nashville	Louisville and Nashville	185		7	27,750 00		150 00	
9506	Louisville to Lexington	Louisville and Frankfort and Lexington and Frankfort.	94		12	9,400 00		100 00	
9512	Junction to Bardstown	Bardstown and Louisville	18		6	900 00		50 00	
9524	Nicholasville to Covington	Kentucky Central	112		12	11,200 00		100 00	
9686	Paducah to State Line	New Orleans and Ohio	57		6	2,850 00		50 00	
				466			52,100 00		
	CALIFORNIA.								
14793	Sacramento City to Folsom City	Sacramento Valley	23.20		12	4,640 00		200 00	
				23.20			4,640 00		

E. L. CHILDS, *Acting Second Assistant Postmaster General.*

No. 7—C.

Steamboat service as in operation on September 30, 1863.

States.	Number of route.	Termini.	Distance.	Total distance in each State.	Number of trips per week.	Annual pay.	Annual pay in each State.	Remarks.
			Miles.	*Miles.*		*Dollars.*	*Dollars.*	
New Hampshire	317	Alton Bay to Wolfboro' and Centre Harbor and Meredith Village.	10 20	......	6 3	1,000 00	....	During navigation between Centre Harbor and Meredith Village.
	324	Weir's Bridge to Wolfboro'	30	......	6	650 00	....	During navigation.
				60			1,650 00	
Massachusetts	671	Hyannis to Nantucket	30	......	3	2,500 00	....	Mails to be carried six times a week when boats run so often.
	674	New Bedford to Edgartown	30	......	6	1,800 00	....	
	684	Fall River to New York	180	......	6	3,500 00	....	
				240			7,800 00	
Rhode Island	804	Providence to Newport	28	......	12	800 00	....	
				28			800 00	
New York	1108	Whitehall to Plattsburg	95	......	......	4,800 00	....	Eleven times a week eight months.
	1359	Ithaca to Cayuga	40	......	6	1,713 00	....	Part of a railroad contract.
				135			6,513 00	
New Jersey	2003	New York to Elizabethport	12	......	12	1,200 00	....	Do.
	2065	South Amboy to New York	27	......	6	2,338 00	....	Do.
	2099	New York to Port Monmouth	20	......	6	500 00	....	Do.
				59			4,038 00	
Pennsylvania	2643	Pittsburg to Greensboro'	85	......	6	6,375 00	....	During navigation.
				85			6,375 00	
Maryland	3209	Baltimore to Queenstown	36	......	3	589 00	....	Do.
				36			589 00	
Ohio	9230	Portsmouth to Cincinnati	123	......	3	2,500 00	....	Do.
	9309	Cincinnati to Maysville	64	......	6	4,000 00	....	Do.
				187			6,500 00	
Virginia	4102	Wheeling to Parkersburg	96½	......	3	3,600 00	....	
	4109	Parkersburg to Gallipolis	88	......	3	2,700 00	....	

	4182	Old Point Comfort to Baltimore	185		6	18,000 00		
				396½			24,300 00	
Michigan	12659	Grand Haven to Milwaukie	85			5,578 00		Twelve times a week nine months.
	12712	Hancock to Harvey and Gena to Green Bay	212			7,198 00		Three times a week eight months.
	(part.) 12717	Ontonagon to Detroit	640			7,200 00		Three times a week seven months.
		Branch, Ontonagon to Superior	80					Once a week seven months.
				1,017			19,976 00	
Wisconsin	13068	Oshkosh to New London	67		6	595 00		From May 1 to Nov. 15 in each year.
	13186	Milwaukie to Two Rivers	95		6	200 00		During navigation.
				162			795 00	
Iowa	10906	Fort Madison to Davenport	119		6	4,700 00		
	11122	Dubuque to Davenport	110		6	2,704 00		
				229			7,404 00	
Missouri	10404	St. Louis to Keokuk	232		6	15,000 00		Do.
	10405	St. Louis to Cairo	200		2	7,350 00		
				432			22,350 00	
Minnesota	13501	St. Paul to Galena	373		6	18,400 00		From April 15 to Nov. 15 in each year; pay estimated.
	13502	La Crosse to St. Paul	165		6	9,200 00		Do.
	13570	Prescott to Falls of St. Croix	61½		6	1,995 00		Do.
				599½			29,595 00	
Kentucky	9501	Louisville to Evansville	202		4	8,300 00		
	9503	Louisville to Cincinnati	135		7	9,000 00		
	9510	Evansville, Ind., to Cairo, Ill	197		4	8,400 00		
				534			25,700 00	
California	14751	San Francisco to Sacramento	120		6	20,000 00		
	14752	San Francisco to Stockton	120		6	20,000 00		
	14754	San Francisco to Petaluma	35		6	4,000 00		
	14755	San Francisco to Oakland	9		6	1,500 00		
				284			45,500 00	
Oregon	12723	Portland to Monticello	66		3	4,507 00		
	15002	Astoria to Monticello	55		2	6,990 00		
				121			11,497 00	

E. L. CHILDS,
Acting Second Assistant Postmaster General.

No. 7—D.

Mail routes and service on which contractors were reported disloyal and contracts changed to other parties.

Number of route.	Termini.	Distance.	No. of trips per week.	Contractors reported disloyal.	Compensation.	Date of order.	New contractors.	Distance.	No. of trips per week.	Compensation.
	MAINE.									
98	From Patten to Smyrna	14	1	J. B. Leslie	$77 00	Sept. 26, 1863	Moses P. Clark*	14	1	$77 00
	MARYLAND.									
3225	From Easton to Trappe	9	3	John H. Harris	337 50	June 25, 1863	George Frampton	9	3	337 50
	PENNSYLVANIA.									
2677	From Butler to Lawrenceburg	25	2	Henry Conway	312 00	June 18, 1863	John Gregory	25	2	312 00
	KENTUCKY.									
9555	From West Sterling to West Liberty	51	2	John Smith	649 00	Mar. 24, 1863	John Donohew	51	2	649 00

*Under temporary arrangement with postmaster at Patten.

E. L. CHILDS,
Acting Second Assistant Postmaster General.

No. 8.

Statement of revenue and expenditures for ten years, from 1854 *to* 1863 *inclusive.*

Years.	Expenditures.	Revenues.	Deficiencies.
1854	$8,577,424 12	$6,955,586 22	$1,621,837 90
1855	9,968,342 29	7,352,136 13	2,626,206 16
1856	10,407,868 18	7,620,821 66	2,787,046 50
1857	11,507,670 16	8,053,951 76	3,453,718 40
1858	12,721,636 56	8,186,792 86	4,543,843 70
1859	14,964,493 33	7,968,484 07	6,996,009 26
1860	14,874,772 89	9,218,067 40	5,656,705 49
1861	13,606,759 11	9,049,296 40	4,557,462 71
1862	11,125,364 13	9,012,549 56	2,112,814 57
1863	11,314,206 84	*11,163,789 59	150,417 25

* Not including the standing treasury credit of $700,000 for free matter.

No. 9.

Estimates of expenditures for 1865.

Expenditures.	Amount.
For inland mail transportation	$7,849,000 00
For ship, steamboat, and way letters	8,000 00
For compensation to postmasters	3,100,000 00
For clerks for post offices	1,168,000 00
For payment of letter-carriers	320,000 00
For wrapping paper	40,000 00
For twine	16,000 00
For office stamps	5,000 00
For letter balances	2,500 00
For compensation to blank agent and assistants	6,500 00
For office furniture	2,000 00
For advertising	35,000 00
For postage stamps and stamp envelopes	90,000 00
For mail depredations and special agents	60,000 00
For mail bags	60,000 00
For mail locks and keys	10,000 00
For payment of balances due to foreign countries	200,000 00
For miscellaneous payments	200,000 00
	13,172,000 00
***Estimate for the transportation of foreign mails for* 1865.**	
For trans-Atlantic mails	182,000 00
Between New York, Havana, and other West India ports	48,000 00
Between New York, Central America, and Pacific ports	20,000 00
Expenditures for 1865	13,422,000 00

No. 10.

Postage stamps and stamped envelopes issued during the fiscal year 1862–'63.

POSTAGE STAMPS.

Quarter ending—	1-cent.	3-cent.	5-cent.	10-cent.	12-cent.	24-cent.	30-cent.	90-cent.
September 30, 1862	19,810,000	79,213,100	1,255,120	2,543,670	436,200	4243,75	214,500	6,560
December 31, 1862	13,563,700	54,502,900	417,460	1 157,840	200,475	210,300	54,290	3,250
March 31, 1863	18,986,300	63,910,000	283,860	1,072,600	197,050	242,550	75,040	11,370
June 30, 1863	16,494,000	61,367,400	262,580	902,040	160,950	267,125	90,220	3,560
Totals	68,854,000	258,993,400	2,219,020	5,676,150	994,675	1,144,350	434,050	24,740

STAMPED ENVELOPES AND NEWSPAPER WRAPPERS.

Quarter ending—	1-cent.	3-cent, note size.	3-cent, letter size.	4-cent.	6-cent.	10-cent.	12-cent.	Note sheets.	Letter sheets.	Newspaper wrappers.
September 30, 1862	756,250	64,000	4,044,600	10,000	3,700	51,900	500	2,750	3,250	464,750
December 31, 1862	927,750	71,100	4,834,450	....	10,950	18,950	....	5,000	5,000	368,750
March 31, 1863	1,276,950	81,250	4,999,850	12,250	5,750	20,000	....	....	....	732,000
June 30, 1863	959,000	99,650	5,207,900	....	10,800	11,600	....	....	....	489,000
Totals	3,919,050	316,000	19,086,800	22,250	31,200	102,450	500	7,750	8,250	2,054,500

Whole number of postage stamps	338,340,385	value	$9,683,394
Whole number of stamped envelopes	23,494,250	do.	634,821
Whole number of newspaper wrappers	2,054,500	do.	20,545

No. 11.

Comparative statement of the value of stamps and stamped envelopes issued during the last four years.

Years.	Stamps.	Envelopes.	Total.
1860	$5,920,939 00	$949,377 00	$6,870,316 00
1861	5,908,522 00	781,711 00	6,690,233 00
1862	7,078,188 00	756,904 00	7,835,092 00
1863	9,683,394 00	655,366 00	10,338,760 00

Increase of 1863 over 1860	$3,468,444
Increase of 1863 over 1861	3,648,527
Increase of 1863 over 1862	2,503,668

No. 12.

Statement showing the disposition of money letters received during the year ending June 30, 1863.

	Number.	Value.
Number of money letters sent out for delivery	18,219	
Aggregate contents of same		$75,742 96
Number of letters delivered	15,048	
Aggregate amount of money contained in letters delivered		63,627 75
Number of letters returned and filed	1,926	
Aggregate amount in letters unclaimed		7,158 83
Number of letters outstanding	1,245	
Aggregate amount of money in same		4,956 41

No. 13.

Statement of "minor dead letters," containing papers of value other than money, registered and sent out to the writers or owners thereof from July 1, 1862, *to July* 1, 1863.

Minor dead letters.	Number.	Amount.
Number of letters sent out	8,332	
Number of letters delivered	7,559	$1,488,098 25
Number of letters unclaimed	617	39,882 50
Number of letters outstanding	156	16,597 06
Contents of letters sent out.		
Bills of exchange, drafts, and letters of credit; bonds, and notes of hand; checks, orders, and treasury warrants; certificates of deposit, &c.	....	1,544,277 81
Deeds, mortgages, conveyances, land titles, &c	555	
Powers of attorney, contracts, articles of agreement, &c	249	
Certificates of stock, land warrants, patents, and pension papers	94	
Miscellaneous papers	331	
Reasons assigned for the non-delivery of letters originally to the person addressea.		
Held for postage	455	
Misdirected	1,573	
Name of post office omitted	110	
Removed	141	
Missent	91	
Mails suspended	52	
Refused	29	
Persons addressed deceased	27	
Fictitious	10	
Not called for, not known, and not found	5,844	

Postage on "minor dead letters" sent out during the fiscal year.

Postage on 8,332 letters sent out	$855 19
Postage on 7,559 letters delivered	742 90

No. 14.

Statement of letters containing miscellaneous articles received during the year ending June 30, 1863.

Number of letters and packages received	16,763	
Number sent out		12,579
Number delivered		8,273
Number unclaimed		3,214
Number outstanding		1 092
Contents of packages sent out.		
Number of packages of jewelry		764
Number of miscellaneous articles		897
Number of photographs and daguerreotypes		10 918
Reasons assigned why not previously delivered.		
Held for postage		684
Misdirected and insufficient address		835
Missent		216
Mails suspended		194
Refused		45
Not called for, not known, not found		10,605
Amount of postage due the department from 8,273 letters and packages delivered, as per postmasters' receipts on file $1,131 35		

No. 15.

Statement showing the number of letters "held for postage," "held for carriers' fee," and because misdirected, and the number sent to dead-letter office from the following named offices, as also the number delivered therefrom upon notice to persons addressed, from January 1, *to June* 30, 1863.

Offices.	States.	Held for postage and sent to dead-letter office.	Held for postage and delivered upon notice to party addressed.	Held for carriers' fee and sent to dead-letter office.	Held for carriers' fee and delivered upon notice to party addressed.	Misdirected.
Albany	New York	519	592	....	....	95
Alleghany	Pennsylvania	166	232	....	....	35
Auburn	New York	72	72	....	....	3
Baltimore	Maryland	1,145	433	....	....	166
Buffalo	New York	531	413	....	....	28
Brooklyn	New York	441	619	....	....	186
Boston	Massachusetts	519	1,487	202	783	413
Bangor	Maine	167	146	....	....	7
Cleveland	Ohio	152	573	....	....	115
Columbus	Ohio	207	313	....	....	14
Chicago	Illinois	3,599	3,313	....	....	6,786
Cincinnati	Ohio	1,576	766	....	....	105
Dayton	Ohio	216	165	....	....	18
Decatur	Illinois	168	100	....	....	16
Detroit	Michigan	531	624	....	....	9
Davenport	Iowa	177	233	....	....	45
Dubuque	Iowa	215	65	....	....	81
Evansville	Indiana	148	247	....	....	20
Harrisburg	Pennsylvania	117	304	....	....	15
Hartford	Connecticut	50	247	....	....	7
Indianapolis	Indiana	452	657	....	....	311
Iowa City	Iowa	185	141			
Jacksonville	Illinois	442	66	....	....	5
Lafayette	Indiana	206	241	....	....	10
Lowell	Massachusetts	86	165			
Louisville	Kentucky	1,290	988	....	....	116
Leavenworth	Kansas	131	95			
Madison	Wisconsin	41	123	....	....	6
Milwaukie	Wisconsin	179	329	....	....	94
New Orleans	Louisiana	2,164	1,906	....	....	25
New York	New York	111	365	....	....	16
New Haven	Connecticut	4,068	7,429	4,290	6,379	179
Philadelphia	Pennsylvania	1,664	1,959	784	2,768	233
Pittsburg	Pennsylvania	379	138	....	....	85
Portland	Maine	194	197	....	....	28
Peoria	Illinois	288	234	....	....	28
Quincy	Illinois	162	459	....	....	22
Rochester	New York	158	214	....	....	55
Sacramento City	California	436	116	....	....	5
San Francisco	California	552	316	....	....	5
St. Louis	Missouri	703	1,308	....	....	59
Springfield	Illinois	311	411	....	....	15
Springfield	Massachusetts	57	324			
Syracuse	New York	73	154	....	....	27
Troy	New York	283	245	....	....	48
Washington	Dist. of Columbia	1,101	1,797	....	....	159
		26,366	31,239	5,276	9,930	9,689

No. 16.

Annual report of dead letters sent to the writers from July 1, 1862, *to June* 30, 1863; *also, a report of letters refused, &c., by writers, and returned to this department.*

Date when sent to the writers.	Number of dead letters sent to the writers.	Number not delivered and returned to this department.
July, 1862	77,205	24,049
August, 1862	83,967	16,853
September, 1862	82,532	23,453
October, 1862	83,188	22,276
November, 1862	72,802	22,377
December, 1862	87,653	25,108
January, 1863	80,503	18,757
February, 1863	81,785	21,120
March, 1863	90,362	27,547
April, 1863	92,250	27,400
May, 1863	90,319	28,477
June, 1863	84,689	29,800
	1,007,255	287,211

Parties to whom letters were sent.

Banks and Insurance companies	4,898	Descriptive lists, discharges, &c., sent to Adjutant General's office	8,822
Business firms	89,642	Letters in foreign languages	35,861
Individuals	912,715		

RECAPITULATION.

Grand total returned to writers	1,007,255	Grand total not delivered	287,211

55,044 letters have been returned to the writers which contained stamps, change, and articles of less value than one dollar.

Letters sent free, written to sick and wounded soldiers in hospitals, number 19,002; of those 4,537 have been returned to the department; the writers "could not be found."

Average number sent per month 83,938; average per day 3,228.

No. 17.

Statement of dead letters returned to foreign countries during the fiscal year 1862–'63.

Countries.	Unpaid.	Paid or free.	Total number.	Postage.
To England	43,081	18,773	61,854	$5,193 43
France	5,727	5,021	10,748	1,086 37
Prussia	13,758	1,637	15,395	1,006 64
Hamburg	3,703	1,526	5,229	391 45
Bremen	4,925	2,137	7,062	586 29
Belgium	222	198	420	17 22
Canada	....	....	33,221	
Nova Scotia	....	....	1,788	
New Brunswick	....	....	1,177	
Prince Edward's Island	....	....	251	
	71,416	29,292	137,145	8,281 40

No. 18.

Statement of dead letters received from foreign countries during the fiscal year 1862–'63.

Countries.	Unpaid.	Paid or free.	Total number.	Postage.
From England	5,188	9,900	15,088	$1,074 32
France	1,582	1,045	2,627	158 72
Prussia	1,414	511	1,925	378 34
Hamburg	482	389	871	33 00
Bremen	298	228	526	14 95
Belgium	97	22	119	20 20
Canada	....	....	27,261	
Nova Scotia	....	....	1,195	
New Brunswick	....	....	1,787	
Prince Edward's Island	....	....	220	
	9,061	12,095	51,619	1,479 53

No. 19.

AUDITOR'S REPORT.

OFFICE OF THE AUDITOR OF THE TREASURY
FOR THE POST OFFICE DEPARTMENT,
October 30, 1863.

SIR: I have the honor to submit the following report exhibiting the financial affairs of the Post Office Department, for the fiscal year ending June 30, 1863—the results of the efforts made by this bureau to collect the scattered revenues of the department, from its numerous debtors—and a brief summary of the immense clerical labor performed in adjusting, stating, and certifying its diversified accounts.

Tabular statements are, also, subjoined, numbered from 1 to 27, inclusive, exhibiting, in detail, the nature and extent of the receipts and expenditures of the department, and the results of our postal intercourse with foreign nations.

Statements are, likewise, appended, exhibiting the postal balances due to foreign governments; also, statements showing the amounts due to the various lines of ocean steamers, for sea and inland postages.

REVENUE ACCOUNT OF THE POST OFFICE DEPARTMENT.

The amounts placed in the Treasury, for the service of the department, for the fiscal year, being "grants" by Congress, in aid of the revenues, under the acts cited below, were as follows:

Under the third section of the act entitled "An act making appropriations for the service of the Post Office Department during the fiscal year ending the thirtieth of June, eighteen hundred and sixty-three," approved April 17, 1862, (12 Statutes at Large, 382)	$1,000,000 00
Under the fourth section of the act entitled "An act making appropriations for the service of the Post Office Department during the fiscal year ending the thirtieth of June, eighteen hundred and sixty-four," approved February 9, 1863, (12 Statutes at Large, 647)	6,000 00
Under the act approved May 26, 1862, (12 Statutes at Large, 408,) entitled "An act to amend an act entitled 'An act making appropriations for the service of the Post Office Department during the fiscal year ending the thirtieth of June, eighteen hundred and sixty-three,' approved April seventeenth, eighteen hundred and sixty-two"	6,951 28
Total amount of "grants" drawn from the treasury	1,012,951 28
The balance standing on the books of this office to the credit of the revenue account of the Post Office Department, on the 30th day of June, 1862, was	372,396 95
The receipts of the department for the fiscal year ending June 30, 1863, as presented in the tabular statement herewith, numbered 1, were	11,163,789 59
Aggregate of "grants" and revenue	12,549,137 82

The expenditures of the department for the fiscal year ending June 30, 1863, together with the arrearages of the previous years paid during the year 1863, as shown in the statement herewith, numbered 2, were	$11, 314, 206 84	
Add amount of accounts closed by being charged to "bad debt account"	3 23	
	11, 314, 210 07	
Deduct balances on credit accounts closed by being credited to the nominal account of "suspense."	7, 795 34	
		$11, 306, 414 73
Leaving to the credit of the revenue account, on the 1st day of July, 1863, the sum of		1, 242, 723 09

The excess of expenditures of all kinds over the revenue of the year, inclusive of the receipts and payments for foreign postages, and exclusive of the amount to the credit of the department on the 1st of July, 1862, and of the sums appropriated by the several acts of Congress out of the general revenues of the United States, was	$150, 417 25
From which deduct accounts closed by being credited to the nominal account of "suspense," $7,795 34, less accounts closed by charge to "bad debt account," $3 23	7, 792 11
Total excess of expenditures of all kinds over the revenue of the fiscal year ending June 30, 1863	142, 625 14

The net revenue of the department from postages, being the aggregate amount of the balances due to the United States by postmasters on the adjustment of their quarterly accounts for the year, after retaining their compensation and deducting the expenses of their offices, was:

For the quarter ending September 30, 1862	$2, 581, 791 12
For the quarter ending December 31, 1862	1, 383, 664 57
For the quarter ending March 31, 1863	1, 534, 302 04
For the quarter ending June 30, 1863	1, 675, 924 07
Total net revenue from postages	7, 175, 681 80

The amount of letter postage paid in money was:

For the quarter ending September 30, 1862	$163, 604 45
For the quarter ending December 31, 1862	165, 039 42
For the quarter ending March 31, 1863	202, 207 05
For the quarter ending June 30, 1863	196, 604 26
Total	727, 455 18

The number of quarterly returns of postmasters received and audited during the year, and on which the sum of $7,175,681 80 was found due to the United States, was:

For the quarter ending September 30, 1862	19, 427
For the quarter ending December 31, 1862	19, 569

For the quarter ending March 31, 1863	19,534
For the quarter ending June 30, 1863	19,709
Total number	78,239

The total amount of stamps and stamped envelopes sold during the year was:

For the quarter ending September 30, 1862		$3,275,560 59
For the quarter ending December 31, 1862		2,101,774 11
For the quarter ending March 31, 1863		1,906,922 59
For the quarter ending June 30, 1863		2,340,272 33
		9,624,529 62
The amount used in the prepayment of postage and cancelled was:		
For the quarter ending September 30, 1862	$1,934,258 09	
For the quarter ending December 31, 1862	2,058,854 07	
For the quarter ending March 31, 1863	2,123,060 27	
For the quarter ending June 30, 1863	2,267,163 28	
Total cancelled	8,383,335 71	
To which add stamps used as currency, redeemed and destroyed	392,499 82	
Total cancelled and redeemed		8,775,835 53
Leaving in the possession of the purchasers		848,694 09

The gross amount collected as registration fees on valuable letters was:

For the quarter ending September 30, 1862	$3,752 45
For the quarter ending December 31, 1862	4,663 10
For the quarter ending March 31, 1863	5,320 50
For the quarter ending June 30, 1863	4,908 60
	18,644 65

CONTRACTORS' ACCOUNTS.

The average number of accounts of contractors and others engaged in carrying the mails, settled in each quarter of the year, was:

On regular mail routes	4,164
On special mail routes	2,161
Of route and special agents	1,203
Of mail messengers and local agents	1,717
Total number of accounts each quarter	9,245
Aggregate of settlement of such accounts during the year	36,980

MAIL TRANSPORTATION ACCOUNT.

The amount charged to "accrued transportation," and placed to the credit of mail contractors and others for mail transportation, during the year, was:

For regular service on mail lines		$5, 755, 220 09
For supply of "special" and "mail messenger" offices		236, 123 37
For salaries of "route agents"		280, 358 31
		6, 271, 701 77
And for foreign mail transportation:		
For New York, Southampton, and Havre mails		61, 905 89
For New York and New Orleans mails		12, 398 96
For Liverpool, New York, and Philadelphia mails		180, 076 53
For New York and Havana mails		57, 968 38
For Portland and Liverpool mails		31, 993 35
For New York and San Francisco mails, *via* Panama		11, 343 77
For New York and Jamaica mails		1, 520 12
For New York and Port Royal mails		101 75
For expenses of government mail agent at Aspinwall		450 00
For expenses of government mail agent at Panama		720 00
For expenses of government mail agent at Havana		250 00
		6, 630, 430 52
The amount credited to "accrued transportation," and charged to contractors for over-credits, damages, &c., during the year, was	$12, 478 09	
Of "fines" imposed on contractors	2, 636 11	
Of "deductions" from their pay	44, 445 72	
		59, 559 92
Net amount to the credit of mail contractors and others		6, 570, 870 60
The amount actually paid and credited during the year for mail transportation was		$6, 541, 580 33
There was paid for mail transportation of previous years		184, 182 59

COLLECTION OF POST OFFICE REVENUES.

The number of post offices in operation during the year was 20,145, which are thus classified under the regulations adopted for the government of the department, chapter 26, sections 286 to 289, pages 107 and 108:

The following named offices, twenty-five in number, are denominated "depositories," and are required by the Postmaster General to receive and retain, subject to the drafts of the department, the funds of certain adjacent offices as well as the revenues of their own:

Albany, New York.
Baltimore, Maryland.
Bangor, Maine.
Batavia, New York.
Buffalo, New York.
Chicago, Illinois.
Cincinnati, Ohio.
Cleveland, Ohio.
Columbus, Ohio.
Detroit, Michigan.
Geneva, New York.
Harrisburg, Pennsylvania.
Hartford, Connecticut.
Lexington, Kentucky.
Louisville, Kentucky.
New Haven, Connecticut.
Pittsburg, Pennsyvlania.
Portland, Maine.
Providence, Rhode Island.
Rochester, New York.
Steubenville, Ohio.
Syracuse, New York.
Utica, New York.
Wheeling, Virginia.
Worcester, Massachusetts.

Three hundred and fifty-eight are "draft offices," and, together with the foregoing offices, paid during the year 12,991 drafts issued by the Postmaster General, and countersigned, entered, and sent out by the Auditor. for sums amounting in the aggregate to........................	$1,722,103 33
Five hundred and ninety-nine are "deposit offices," and during the year deposited with the treasurer and the assistant treasurers of the United States the sum of.............	2,488,443 42
In addition to which, they deposited with the twenty-five "depositaries" named above $487,600 44, which is embraced in the sum of $1,722,103 33 paid on the drafts of the department by the said "depositories" and "draft offices."	
Fifteen thousand two hundred and eighty-five are "collection offices," and paid "collection on orders" issued to mail contractors......................................	1,964,955 68
Three thousand eight hundred and seventy-eight are "special" and "mail messenger" offices, and derive their mail supplies by the payment of the revenues of their offices, amounting to..	236,123 37
Showing the amount paid into the treasury for the use and purposes of the Post Office Department by postmasters to have been......................................	6,411,625 80

Revenue and balances uncollected.

For the fiscal year ending June 30—	Gross revenue.	Am'nts still due to the United States not in suit.	Am'nts still due to the United States in suit.
1846	$3,487,199 35	$5 32	$3,025 77
1847	3,945,892 98	115 01	728 06
1848	3,371,077 00	6 15	802 16
1849	4,705,176 28	32 42	1,833 37
1850	5,499,984 86	124 58	1,071 47
1851	6,410,604 33	478 46	2,599 71
1852	5,184,526 84	790 35	2,816 90
1853	5,240,724 70	12,622 51	41,794 80
1854	6,255,586 22	12,345 07	11,772 89
1855	6,642,136 13	6,124 48	8,104 65
1856	6,920,821 66	1,935 00	14,904 81
1857	7,353,951 76	15,279 98	10,038 06
1858	7,486,792 86	12,263 81	19,539 59
1859	7,968,484 07	11,920 66	21,148 31
1860	8,518,067 40	34,617 25	201,065 63
1861	8,349,296 40	88,131 63	120,556 05
1862	8,299,820 90	25,773 91	19,449 59
1863	11,163,789 59	65,807 04	1,731 11
Total	116,803,933 33	288,373 63	482,982 93

Total due the United States by late postmasters to June 30, 1862..	$703,818 41
Amount due for the last fiscal year..........................	67,538 15
Total amount..	771,356 56

COLLECTIONS.

The "collecting division" of this office had charge of the following number of accounts during the fiscal year:

Of postmasters	20,145
Of late postmasters whose terms of office expired between July 1, 1845, and June 30, 1862	34,031
Of late postmasters of the last fiscal year	4,872
Total number	59,048

The number of changes of postmasters reported by the appointment office of the Post Office Department during the year, requiring the final adjustment of their respective accounts, was 4,872, and the balances ascertained to be due to the United States thereon, amounting to		$162,759 13
Of which sum there was collected	$93,389 69	
Credited on vouchers	1,691 29	
Charged to "suspense" account	140 00	
		95,220 98
Amount remaining for collection		67,538 15
Of which sum there is in suit		$1,731 11
Amount due and not in suit		65,807 04
		67,538 15

The balances due to the United States by late postmasters, whose term of office expired between July 1, 1845, and June 30, 1862, uncollected and *not in suit* July 1, 1862, as stated in the last annual report of this office, was		$356,998 98
Which was increased by "estimated postages"		18,960 70
Total for collection during the fiscal year ending June 30, 1863		375,959 68
Of which sum there was collected	$66,985 52	
Credited on vouchers	41,356 05	
Closed by "suspense" account	208 85	
Charged to "bad debt" account	337 48	
		108,887 90
Amount uncollected June 30, 1863		267,071 78
Of which there has been placed in suit		44,505 19
Amount due and not in suit		222,566 59

SUMMARY OF DEBTS AND COLLECTIONS.

The aggregate amount due the United States on the 30th of June, 1862, by late postmasters, whose terms of office expired between July 1, 1845, and June 30, 1862, was............		$818,010 13
Add amount due by late postmasters of the last fiscal year....		162,759 13
Increased by "estimated postages," penalties, and other charges		19,221 12
Total for collection during the year....................		999,990 38
The amount collected and credited on accounts due prior to June 30, 1862, was............	$133,412 84	
On accounts of the past year..................	95,220 98	
Total of collections and credits........................		228,633 82
Amount remaining due to the United States June 30, 1863....		771,356 56
Of this sum there is in suit................................		$482,982 93
And not in suit....................................		288,373 63
		771,356 56

BALANCES DUE TO LATE POSTMASTERS.

Balances apparently due to late postmasters between July 1, 1845, and June 30, 1862, as stated in the last annual report of this office..	$311,450 80
Amount paid or closed by adjustment during the year of balances due prior to June 30, 1862........................	18,261 36
Balance due to June 30, 1862......................	293,189 44
Add amount due to late postmasters of the last fiscal year......	28,472 61
Total amount of balances due to late postmasters......	321,662 05
Amount paid or closed by adjustment during the year........	4,280 34
Amount apparently due to late postmasters July 1, 1863......	317,381 71

SUITS.

The amount due by late postmasters whose terms of office expired between July 1, 1845, and June 30, 1862, for the collection of which suits were instituted prior to June 30, 1862, as stated in the last annual report of this office, was........	$260,552 23
Add amount of 230 new cases commenced during the fiscal year, for the collection of balances due on accounts prior to June 30, 1862..	95,340 79
Add, also, amount of 15 new cases on accounts of the last fiscal year..	5,658 24
Amount in suit during the year...........................	361,551 26
Amount collected during the year.........................	24,024 33
Leaving still due, June 30, 1863.......................	337,526 93

In one hundred and nine of the suits instituted during the year, judgments have been recovered in favor of the United States; sixty-three of them have been concluded, and this sum paid into the treasury	$6,630	21
The amount collected during the year on eighty accounts, for the collection of which suit was commenced prior to June 30, 1862, was	17,394	12
Total	24,024	33

EMOLUMENTS AND COMMISSIONS.

A surplus of emoluments and commissions accrued at the following post offices, after deducting the maximum compensation of $2,000 per annum of the postmasters, and the necessary incidental expenses of the offices, during the fiscal year ending June 30, 1863, viz:

Alexandria, Va	$2,199	77	Elmira, N. Y	$577	12
Albany, N. Y	12,002	05	Fort Wayne, Ind	34	39
Auburn, N. Y	409	33	Frederick, Md	962	08
Aurora, Ill	77	83	Frankfort, Ky	179	04
Augusta, Me	371	36	Fond du Lac, Wis	130	66
Alton, Ill	188	10	Georgetown, D. C	295	03
Alleghany City, Pa	647	04	Gen. Banks's Headquar's	1,304	28
Annapolis, Md	2	39	Hartford, Ct	2,369	19
Baltimore, Md	9,440	12	Harper's Ferry, Va	1,700	74
Boston, Mass	36,691	86	Harrisburg, Pa	3,142	11
Brooklyn, N. Y	1,917	35	Hagerstown, Md	519	13
Buffalo, N. Y	9,537	28	Hamilton, Ohio	9	43
Beaufort, S. C	157	72	Indianapolis, Ind	14,726	63
Bangor, Me	84	84	Iowa City, Iowa	530	79
Bowling Green, Ky	855	98	Jersey City, N. J	1,585	34
Bridgeport, Ct	434	97	Jackson, Mich	81	17
Bloomington, Ill	20	05	Jefferson City, Mo	119	57
Brattleboro', Vt	233	04	Keokuk, Iowa	2,099	72
Columbus, Ohio	575	56	Kanawha, Va	1,970	08
Columbus, Ky	909	80	Kensington, Pa	2	62
Cleveland, Ohio	6,526	34	Kalamazoo, Mich	720	14
Charlestown, Mass	462	11	Louisville, Ky	17,887	30
Calais, Me	105	34	Lexington, Ky	1,241	18
Concord, N. H	29	16	Lebanon, Ky	274	81
Chillicothe, Ohio	193	22	Lafayette, Ind	1,554	27
Cincinnati, Ohio	25,758	41	Lynn, Mass	495	76
Chicago, Ill	40,581	61	Lansing, Mich	227	69
Cairo, Ill	7,256	83	Lowell, Mass	135	70
Covington, Ky	851	21	Lancaster, Pa	699	89
Clarksville, Tenn	16	44	Lockport, N. Y	235	57
Detroit, Mich	19,802	78	Lawrence, Mass	138	03
Dubuque, Iowa	3,889	71	Leavenworth City, Kan.	58	82
Decatur, Ill	75	65	Memphis, Tenn	8,998	85
Dayton, Ohio	1,108	33	Manchester N. H	394	16
Danville, Ky	492	36	Middletown, Ct	49	80
Denver City, Col. Ter.	228	57	Marysville, Cal	$283	60
Erie, Pa	301	57	Mount Vernon, Ky	19	69
Evansville, Ind	565	08	Milwaukie, Wis	2,263	41

Madison, Wis	$891 02
Montpelier, Vt	484 68
Mansfield, Ohio	195 51
Martinsburg, Va	139 82
New Bedford Ct	495 61
Newark, N. J	1,504 55
Nashville, Tenn	14,654 08
New York, N. Y	155,158 94
New Haven, Ct	1,249 09
Newport, R. I	1,041 18
Norfolk, Va	3,761 60
New Orleans La	12,049 10
Norwich, Ct	119 91
Newburg, N. Y	234 50
New Brunswick, N. J	370 22
Newport, Ky	571 76
New Creek, Va	688 91
Newbern, N. C	594 57
Oswego, N. Y	945 93
Oshkosh, Wis	20 74
Ottawa, Ill	57 92
Old Point Comfort, Va	3,382 32
Port Royal S. C	1,892 66
Portland, Me	7,137 60
Philadelphia, Pa	29,156 61
Pittsburg, Pa	13,827 70
Providence, R. I	1,320 84
Portsmouth, N. H	277 36
Poughkeepsie, N. Y	1,047 47
Portsmouth, Ohio	38 38
Poolesville, Md	8 27
Paducah, Ky	32 32
Pilot Knob, Mo	519 08
Quincy, Ill	450 68
Rochester, N. Y	2,225 52
Rockford, Ill	489 16
Reading, Pa	$461 46
Roxbury, Mass	26 84
Rolla, Mo	1,318 23
Racine, Wis	212 17
St. Louis, Mo	14,342 86
Syracuse, N. Y	488 44
Salem, Mass	550 55
Springfield, Mass	538 85
Springfield, Mo	2,038 87
Springfield, Ill	285 38
Sandy Hook, Md	12 59
San Francisco, Cal	464 30
Sacramento, Cal	4,201 18
Sandusky, Ohio	67 77
St. Joseph, Mo	4,945 66
Steubenville, Ohio	133 72
Toledo, Ohio	4,715 86
Troy, N. Y	565 09
Trenton, N. J	1,274 52
Utica, N. Y	1,442 45
Virginia City, Neb. T	198 98
Williamsport, Md	17 38
Williamsport, Pa	281 42
Washington, D. C	37,177 61
Wheeling, West Va	2,971 26
Worcester, Mass	1,260 40
Wilmington Del	1,116 36
Williamsburg, N. Y	937 51
Watertown, N. Y	71 30
York, Pa	414 51
Ypsilanti, Mich	34 55
Zanesville, Ohio	70 41
Total	592,673 04

The foregoing surplus of emoluments and commissions exceeds, in the aggregate, that which accrued during the fiscal year ending June 30, 1862, in the sum of $302,167 47.

SUMMARY OF PRINCIPAL LABORS.

The following brief summary indicates, partially, the chief labors performed by the office during the last fiscal year:

The number of accounts of late postmasters of the fiscal year requiring the final adjustment of their respective accounts	4,872
The number of accounts of late postmasters, prior to July 1, 1862	34,031
The number of accounts of present postmasters	20,145
The number of quarterly accounts of postmasters adjusted, audited, and registered, was	78,239
The number of stamp and stamp envelope accounts examined, compared, and re-stated	79,007

The number of accounts of mail contractors audited and reported for payment	16,656
The number of accounts of special and route agents audited and reported for payment	4,812
The number of accounts of special contractors and mail messengers audited and reported for payment	15,512
The number of miscellaneous accounts audited and reported for payment	245
The number of accounts of United States attorneys and marshals, and of clerks of United States courts, adjusted and reported for payment	248
The number of accounts for paper and printing post office blanks audited and reported for payment	65
The number of accounts for advertising audited and reported for payment	17
The number of suits instituted	245
The number of judgments obtained in favor of the United States	109
The number of collection orders issued to mail contractors	61,151
The number of collection drafts issued	7,707
The number of department drafts countersigned and registered	12,991
The number of department warrants countersigned and registered	2,953
The number of letters received	103,028
The number of letters prepared, recorded, and mailed	74,164
The number of folio-post pages of correspondence recorded in the collection letter-book	3,770
The number of pages recorded in the miscellaneous letter-book	325
The number of pages recorded in the suit letter-book	435
The number of pages recorded in the report letter-book	180
The number of accounts on the ledgers	64,708
The number of corrected quarterly accounts of postmasters copied, re-stated, and mailed	21,031
Amount collected on drafts issued on present postmasters	$257,735 38
Amount collected on drafts issued on late postmasters	204,609 49
Amount collected on orders issued in favor of mail contractors	1,964,955 68
Amount collected on drafts issued on mail contractors	129,696 67
Amount collected from special and mail messenger offices	236,123 37
Amount collected by suit	24,024 33

CONCLUSION.

The foregoing report, it affords me profound satisfaction to state, exhibits a great improvement in the financial status of the Post Office Department. The receipts of the department, for the fiscal year, reached the unexampled sum of $11,163,789 59, whilst the expenditures amounted to but $11,314,206 84; being an excess in expenditures, over receipts, of only $150,417 25. The excess of expenditures over receipts, for the fiscal year ending June 30, 1862, was $2,825,543 23.

The reputation and usefulness, as well as the harmonious and prosperous workings of the mail service, are, in a great degree, dependent upon the honest, prompt, and successful administration of the various duties devolved by law upon this bureau. The energetic measures adopted by this office, for the collection of the moneys due to the department, have been, as will be perceived, eminently successful. These measures have enabled the department to realize its revenues at the earliest practicable period, and, thereby, to meet the quarterly demands upon it, with unusual promptitude; all of which have proved to be a source alike of convenience to the department, and of advantage to the public.

In the eighth section of an act of Congress approved July 2, 1836, it is provided "that if either the Postmaster General, or any person whose account shall be settled" in this office, "be dissatisfied therewith, he may, within twelve months, appeal to the First Comptroller of the Treasury, whose decision shall be final and conclusive." Under this statute, only two appeals were taken from the decisions of this office, during the fiscal year. In these cases, important legal questions were involved. One of the cases was decided by the present able incumbent of the First Comptroller's office, and the other by his lamented predecessor. In both cases, the decisions of this office were affirmed.

I think I may safely add, that the manifold duties imposed by law upon the office, have all been promptly and successfully administered.

Respectfully submitted.

G. ADAMS, *Auditor*.

Hon. M. Blair,
Postmaster General.

MISCELLANEOUS PAYMENTS.

A detailed statement, under this head, of the payments made by the Post Office Department, for the fiscal year ending June 30, 1863, *exhibiting the following sums placed to the credit of postmasters and others, and charged to miscellaneous account, viz:*

1862.			
Oct. 16.	Allowed A. M. Clapp, postmaster, Buffalo, New York, for fire-pot, mason work, &c., which should have been allowed in his commission account for fourth quarter 1861	$497	
Nov. 4.	Allowed Daniel F. Pickering, postmaster, Elmira, New York, for rent, gas, stationery, and fuel, suspended in second quarter 1862, for want of vouchers	97	35
1863.			
Aug. 10.	Allowed C. H. Hopkins, postmaster, Utica, New York, for the transportation and proper delivery of ten thousand dollars United States demand notes	12	50
Feb. 6.	Allowed N. D. Sperry, postmaster, New Haven, Connecticut, for printing and stationery	25	41
Mar. 5.	Allowed C. H. Carter, postmaster, Waterbury, Conn., for office rent, vouchers suspended in return for third quarter, 1862	41	19
June 10.	Allowed Nahum Capen, late postmaster, Boston, Massachusetts, for street boxes in the year 1858	268	40
July 17.	Allowed D. Kellogg, late postmaster, Brattleboro', Vermont, for stationery, fuel, &c	25	99
1862.			
Oct. 3.	Allowed J. L. Riddell, late postmaster, New Orleans, Louisiana, for lights, stationery, hire of watchmen, &c.	750	70
1863.			
Ap'l 23.	Allowed J. D. Urney, postmaster, Harrodsburg, Indiana, for expenses incurred in removing post office from Guthrie, Indiana	3	50

1862.		
Dec. 3.	Allowed J. J. Hoffman, late postmaster, Massillon, Ohio, for personal expenses incurred in visiting a post office and removing the property of the United States therefrom	$39 50
1863.		
May 28.	Allowed George H. King, postmaster, Mansfield, Ohio, for various expenses suspended in third quarter 1862	82 55
Mar. 14.	Allowed Wm. Metzger, postmaster, Poolesville, Maryland, for sundry expenses in his office suspended in fourth quarter 1861	164 00
Mar. 28.	Allowed W. D. Massey, postmaster, Alexandria, Virginia, for fuel in first quarter 1863	12 00
Mar. 28.	Allowed W. D. Massey, postmaster, Alexandria, Virginia, for expenses incurred in endeavoring to collect a draft for $125 19 on M. Forbes, postmaster, Falmouth, Virginia	2 75
May 23.	Allowed Mrs. Cornelia Davis, postmistress, Libertytown, Maryland, for removing property of the United States from the post office at Johnsville, Maryland	2 00
May 30.	Allowed Joseph H. Sears, late postmaster, Port Royal, South Carolina, for various expenses incurred by him in carrying on his office, from December 3, 1861, to March 13, 1863	2,909 56
Mar. 6.	Allowed George Zinn, postmaster, Carlisle, Pennsylvania, for office rent and gas, suspended in third quarter 1862	28 43
May 28.	Allowed C. A. Walborne, postmaster, at Philadelphia, Pennsylvania, for refreshments furnished clerks and messengers engaged in removing post office to new building, February 25, 1863	37 50
1862.		
Nov. 8.	Allowed T. G. Elliott, postmaster, Shasta, California, for expenses incurred in collecting a draft on H. H. Street for $653 46	25 00
1863.		
Feb. 27.	Allowed Charles L. Weller, late postmaster, San Francisco, California, for sundry expenses suspended in third quarter 1854, for want of sufficient surplus in said quarter	852 32
Mar. 10.	Allowed R. G. Williams, postmaster, Mount Vernon, Kentucky, for money stolen from his office by a band of rebel guerillas on the 17th of February, 1863	17 00

Amounts paid by the department on warrants and charged to miscellaneous account, viz :

1863.		
June 27.	Paid Levi J. Alfred, being money stolen from the mails, and recovered and identified, October 10, 1862, and paid over to him under the second section act of March 1, 1847	40 00
June 1.	Paid American Bank Note Company, for printing blanks, binding books, &c	171 25
June 26.	Paid Elisha J. English, late United States marshal for the district of Indiana in two suits	37 05
May 27.	Paid S. E. Sprague, for services as clerk of the district	

	court of the United States for the district of Massachusetts in one case	$7 65
July 9.	Paid Jessup & Moore, for twine furnished for Washington and New York agencies for second quarter 1863	760 00
Aug. 1.	Paid William H. Bradley, for services as clerk of the district court of the United States for the northern district of Illinois in nineteen cases	197 25
Jan. 12.	Paid Jessup & Moore, for hemp twine furnished New York and Buffalo agencies for quarter ended December 31, 1862	596 00
1862.		
July 22.	Paid same for ditto, furnished same agencies, 2,500 pounds, at $14\frac{4}{10}$ cents	360 00
1863.		
July 8.	Paid George A. Nourse, for services as attorney of the United States for the district of Minnesota in one suit	20 00
Mar. 27.	Paid Jessup & Moore, for hemp twine furnished Washington agency, 700 pounds, at $15\frac{9}{10}$ cents	111 30
1862.		
July 2.	Paid Jason Harrison, for services as clerk of the United States district court for the western district of Missouri in two cases	34 55
1863.		
July 8.	Paid McIntyre & Schlichter, for jute twine furnished Post Office Department during second quarter 1863, 10,200 pounds, at 30 cents	3,060 00
July 11.	Paid D. A. Rawlings, for services as United States marshal for the eastern district of Missouri in four cases	35 80
July 13.	Paid George F. Nesbitt, for envelopes furnished Post Office Department for quarter ended June 30, 1863.	705 00
July 29.	Paid American Bank Note Company, for printing, binding, &c	171 25
Aug. 13.	Paid Jessup & Moore, for twine furnished Post Office Department for quarter ending June 30, 1863	308 00
Sept. 29.	Paid American Bank Note Company, for furnishing paper, printing drafts, and binding books for Post Office Department	231 25
Ap'l 17.	Paid Jessup & Moore, for hemp twine furnished Buffalo agency, 2,000 pounds, at $15\frac{4}{10}$ cents	308 00
1862.		
Oct. 20.	Paid same for ditto, furnished post offices at Buffalo and New York for quarter ending September 30, 1862	849 50
Oct. 10.	Paid American Bank Note Company, for printing drafts, furnishing paper, and binding books for Post Office Department	171 25
Oct. 29.	Paid George F. Nesbitt, for envelopes furnished Post Office Department for the quarter ended September 30, 1862	472 50
Nov. 20.	Paid George A. Nourse, for services as attorney of the United States for the district of Minnesota in nine cases	165 00
1863.		
Jan. 12.	Paid McIntyre & Schlichter, for jute twine furnished agencies at Buffalo and New York	1,745 12

Jan. 13.	Paid George F. Nesbitt, for manilla envelopes furnished the Post Office Department		$150 00
Feb. 20.	Paid R. J. Lackey, for services as United States district attorney for the western district of Missouri in fourteen cases		280 00
Feb. 20.	Paid James Holbrook, for foreign postage tables		7 50
Feb. 21.	Paid Robert Crozier, for services as United States attorney for the district of Kansas in three cases		30 00
Mar. 25.	Paid American Bank Note Company, for binding drafts, furnishing paper, and binding books for Post Office Department		171 25
Ap'l 6.	Paid McIntyre & Schlichter, for jute twine furnished Post Office Department, 7,500 pounds, at 30 cents		2, 250 00
Ap'l 13.	Paid Robert J. Lackey, for services as attorney of the United States for the western district of Missouri in two cases		25 00
Ap'l 14.	Paid J. T. Morton, for services as clerk of the district court of the United States for the district of Kansas in three cases		37 75
May 12.	Paid E. Howard & Co., Boston, for letter balances furnished the Post Office Department, as follows, viz:		
	200 ½ ounce, at $1 50	$300 00	
	100 ¼ ounce, at $1 50	150 00	
			450 00
June 25.	Paid Fairbanks & Co., New York, for letter balances furnished the Post Office Department		940 00
June 25.	Paid Thomas B. Wallace, for services as marshal of the United States for the western district of Missouri in three cases		86 40

Amounts paid by the department on drafts, and charged to miscellaneous account, viz:

1863.		
Sept. 15.	Paid W. G. Woodward, for services as clerk of the circuit court of the United States for the district of Iowa in the case of the United States *vs.* Isaac R. Ferguson *et al*	7 05
July 11.	Paid J. W. Fitch, for services as marshal of the United States for the northern district of Ohio in five cases	64 11
July 10.	Paid J. B. D. Cogswell, for services as attorney of the United States for the district of Wisconsin in three cases	30 00
July 25.	Paid John Hanna, for services as attorney of the United States for the district of Indiana in one case	10 00
July 30.	Paid Alfred Russell, for services as attorney of the United States for the district of Michigan in two cases	40 00
July 30.	Paid Laurel Summers, late marshal of the United States for the district of Iowa in ten cases	158 91
July 30.	Paid F. Ball, for services as attorney of the United States for the southern district of Ohio in two cases	27 72
Aug. 3.	Paid Alfred Blackman, for services as clerk of the circuit court of the United States for the district of Connecticut in thirty-one cases	35 45

1862.		
Oct. 8.	Paid Thomas Spicer, for services as clerk of the district court of the United States for the district of Maryland in two cases	$10 35
Oct. 10.	Paid A. H. Hart & Co., for flax twine furnished Post Office Department for quarter ended September 30, 1862	2,912 00
Oct. 9.	Paid E. S. Zevely, for stamps furnished Post Office Department	200 00
Nov. 19.	Paid E. Howard & Co., for letter balances for Post Office Department	240 00
Nov. 22.	Paid George F. Talbott, for services as attorney of the United States for the district of Maine in two cases of the United States *vs.* J. W. Cox *et al*	20 00
Nov. 22.	Paid W. H. F. Gurley, for services as attorney of the United States for the district of Iowa in two cases	25 00
Nov. 22.	Paid C. F. Buck, for services as marshal of the United States for the district of Minnesota in five cases	46 00
Nov. 26.	Paid John B. D. Cogswell, for services as attorney of the United States for the district of Wisconsin in three cases	30 00
Dec. 30.	Paid W. H. F. Gurley, for services as attorney of the United States for the district of Iowa in twelve cases	230 00
Dec. 30.	Paid Edward M. Norton, for services as marshal of the United States for the western district of Virginia in two cases	24 18
Dec. 30.	Paid Thomas Spicer, for services as clerk of the district court of the United States for the district of Maryland in the case of the United States *vs.* Benjamin F. Slick *et al*	6 20
1863.		
Jan. 9.	Paid A. H. Hart & Co., for furnishing flax twine to blank agencies in districts Nos. 1 and 2	918 00
Feb. 18.	Paid John H. Bailey, for services as clerk of the United States court for the western district of Pennsylvania in three cases	47 65
Feb. 19.	Paid Jasper Y. Moore, for services as clerk of the district court of the United States for the western district of Virginia in two cases	12 70
Feb. 20.	Paid W. H. F. Gurley, for services as attorney of the United States for the district of Iowa, in taking depositions before the United States commissioners in the case of the United States *vs.* Wakeman *et al.*	17 00
Feb. 21.	Paid R. F. Paine, for services as attorney of the United States for the northern district of Ohio in five cases.	50 00
1862.		
Nov. 24.	Paid Wm. Price, for services as attorney of the United States for the district of Maryland in the case of the United States *vs.* B. F. Slick *et al*	20 00
1863.		
Feb. 21.	Paid John B. D. Cogswell, for services as attorney of the United States for the district of Wisconsin in three cases	30 00
Feb. 24.	Paid George A. Nourse, for services as attorney of the	

	United States for the district of Minnesota in two cases	$25 00
Feb. 21.	Paid F. Ball, for services as attorney of the United States for the southern district of Ohio in two cases.	58 20
Feb. 21.	Paid Edwin C. Larned, for services as United States attorney for the northern district of Illinois, in four cases	80 00
Feb. 27.	Paid D. C. Jackson, for services as United States marshal for the district of Wisconsin in three cases	38 64
Mar. 2.	Paid William D. Wilkins, for services as clerk of the United States circuit court for the district of Michigan in five cases	59 90
Ap'l 8.	Paid A. J. Ballard, for services as late clerk of the circuit court of the United States for the district of Kentucky in five cases	11 85
Ap'l 18.	Paid J. R. Jones, for services as marshal of the United States for the northern district of Illinois in six cases.	81 82
Ap'l 11.	Paid George F. Nesbitt, for envelopes furnished Post Office Department	887 00
Ap'l 13.	Paid Frederick W. Green, for services as clerk of the circuit court of the United States for the northern district of Ohio in three cases	50 55
Ap'l 16.	Paid George A. Nourse, for services as attorney of the United States for the district of Minnesota	20 00
Ap'l 20.	Paid Henry Sproul, for services as clerk of the circuit court of the United States for the western district of Pennsylvania	22 95
Ap'l 23.	Paid Jeremiah Peabody, for work done on lower part of custom-house at Newport, Rhode Island, to be used as a post office, in pursuance of contract made with the postmaster of said city, and under provisions of the "Act making appropriations for the service of the Post Office Department," approved February 9, 1863	1,386 00
Ap'l 23.	Paid Alfred Russell, for services as attorney of the United States for the district of Michigan in eight cases	160 00
Ap'l 23.	Paid W. H. F. Gurley, for services as attorney of the United States for the district of Iowa in four cases..	70 00
May 7.	Paid John B. D. Cogswell, for services as attorney of the United States for the district of Wisconsin in nine cases	70 00
May 9.	Paid John M. Miller, for service as clerk of the United States district court for the district of Wisconsin in thirteen cases	92 50
May 11.	Paid A. Cameron Hunt, for services as marshal of the United States for Colorado Territory in two cases ..	32 96
June 13.	Paid W. H. F. Gurley, for services as attorney of the United States for the district of Iowa in seven cases.	140 00
June 16.	Paid Hiram Willey, for services as attorney of the United States for the district of Connecticut in two cases	30 00
June 16.	Paid Earl Bill, for services as marshal of the United States for the northern district of Ohio in five cases.	90 14
June 16.	Paid William P. Preble, for services as clerk of the	

	district court of the United States for the district of Maine in three cases		$24 85
June 19.	Paid John Hanna, for services as attorney of the United States for the district of Indiana in six cases		60 00
June 26.	Paid William L. Stoughton, late attorney of the United States for the district of Michigan, for services in two cases		40 00
Ap'l 9.	Paid James Harlan, jr., clerk of the United States courts for the district of Kentucky, in two cases		7 00
	Amount allowed to the postmasters at the principal offices in the United States for incidental expenses of their offices, actually and necessarily incurred, such as rent, fuel, stationery, office repairs, printing, gas fixtures, &c., viz:		
	Third quarter 1862	$40,235 25	
	Fourth quarter 1862	51,191 74	
	First quarter 1863	49,647 65	
	Second quarter 1863	39,771 66	
			180,846 30
	Total of miscellaneous payments		$210,031 10

No. 1.

Statement exhibiting the receipts of the Post Office Department, under their several appropriate heads, by quarters, for the fiscal year ended June 30, 1863.

Receipts.	Third quarter 1862.	Fourth quarter 1862.	First quarter 1863.	Second quarter 1863.	Total amount under each head.	Aggregate amount.
Letter postage	$163,604 45	$165,039 42	$202,207 05	$196,604 26	$727,455 18	....
Newspaper postage, &c	117,975 93	116,985 20	121,868 54	124,748 50	481,578 17	....
Registered letters	3,752 45	4,663 10	5,320 50	4,908 60	18,644 65	....
Fines	8 90	20 00	15 00	....	43 90	....
Emoluments	33,037 38	16,589 13	34,564 90	16,215 94	100,407 35	....
Letter-carriers	44,870 79	52,308 72	53,425 69	53,872 57	204,477 77	....
Stamps sold	3,275,560 59	2,101,774 11	1,906,922 59	2,340,272 33	9,624,529 62	....
Miscellaneous	1,188 51	806 66	622 50	4,035 28	6,652 95	....
	3,639,999 00	2,458,186 34	2,324,946 77	2,740,657 48	....	11,163,789 59

G. ADAMS, *Auditor.*

OFFICE OF THE AUDITOR OF THE TREASURY
FOR THE POST OFFICE DEPARTMENT, *October* 30, 1863.

No. 2.

Statement exhibiting the expenditures of the Post Office Department, under their several appropriate heads, by quarters, for the fiscal year ended June 30, 1863.

Expenditures.	Third quarter, 1862.	Fourth quarter, 1862.	First quarter, 1863.	Second quarter, 1863.	Total amount under each head.	Aggregate amount.
Compensation to postmasters	$638,269 61	$715,469 03	$771,419 79	$751,824 91	$2,876,983 34	....
Ship, steamboat, and way letters	2,047 14	1,729 57	1,297 53	1,524 28	6,598 52	....
Transportation of the mails	1,626,428 88	1,624,622 34	1,637,788 44	1,652,740 67	6,541,580 33	....
Wrapping paper	8,224 25	9,640 77	7,712 08	8,865 55	34,442 65	....
Office furniture	228 65	288 97	229 58	469 70	1,216 90	....
Advertising	6,631 06	7,542 33	7,171 39	6,756 41	28,101 19	....
Mail bags	5,842 25	19,284 61	7,084 82	10,799 90	43,011 58	....
Blanks	3,925 15	1,762 66	1,428 57	1,573 51	8,689 89	....
Mail locks, keys, and stamps	3,106 45	677 50	6,221 50	3,318 70	13,324 15	....
Mail depredations, &c.	10,893 58	10,849 33	12,123 81	11,852 67	45,719 39	....
Clerks for offices	246,829 14	242,758 27	269,510 64	278,803 03	1,037,901 08	....
Postage stamps and stamped envelopes	22,188 58	20,153 88	22,601 29	21,088 91	86,032 66	....
Dead letters	8 00	....	....	....	8 00	....
Letter-carriers	44,870 79	52,308 72	53,425 69	53,872 57	204,477 77	....
Miscellaneous	46,626 65	55,455 08	60,641 33	45,828 98	208,552 04	....
Miscellaneous account of Bremen mails*	....	41,431 40	....	....	41,431 40	....
Miscellaneous account of French mails†	....	35,464 13	....	....	35,464 13	....
Miscellaneous account of Hamburg mails‡	....	35,109 65	....	....	35,109 65	....
Miscellaneous account of British mails §	....	....	65,562 17	....	65,562 17	....
	2,666,120 18	2,874,548 24	2,924,218 63	2,849,319 79	....	$11,314,206 84

* To pay Bremen balance of postages for third and fourth quarters, 1861, and four quarters in 1862.

† To pay France balance of postages for second, third, and fourth quarters, 1861.

‡ To pay Hamburg balance of postages for third and fourth quarters, 1861, and first and second quarters in 1862.

§ To pay United Kingdom balance of postages for first and second quarters in 1862.

G. ADAMS, *Auditor.*

OFFICE OF THE AUDITOR OF THE TREASURY FOR THE POST OFFICE DEPARTMENT, *October* 30, 1863.

No. 3.—*Statement of the postal receipts and expenditures for the fiscal year ending June* 30, 1863.

State and Territory.	Letter postage.	Newspaper postage.	Registered letters.	Stamps sold.	Total receipts.	Compensation allowed postmasters.	Incidental expenses of post offices.	Total compensation and incidental expenses.	Transportation.	Total expenses.	Excess of expenditures over receipts.	Excess of receipts over expenditures.
Maine	$14, 347 69	$14, 841 13	$375 35	$225, 663 85	$255, 228 02	$102, 244 33	$16, 080 45	$118, 324 78	$103, 893 03	$222, 217 81	....	$33, 010 21
New Hampshire	5, 912 27	10, 231 28	248 55	157, 448 74	173, 840 84	66, 596 17	6, 358 73	72, 954 90	54, 145 96	127, 100 86	....	46, 739 98
Vermont	5, 936 22	12, 508 57	116 70	154, 226 09	172, 787 58	75, 457 24	2, 531 40	77, 988 64	92, 469 41	170, 458 05	....	2, 329 53
Massachusetts	56, 702 56	24, 945 56	1, 178 80	919, 968 04	1, 002, 794 96	208, 744 03	118, 979 57	327, 723 60	207, 907 96	535, 631 56	....	467, 163 40
Rhode Island	5, 463 27	2, 952 59	162 15	100, 779 68	109, 357 69	23, 053 08	10, 611 20	33, 664 28	32, 758 68	66, 422 96	....	42, 934 73
Connecticut	13, 183 52	15, 572 52	267 35	263, 702 91	292, 726 30	94, 509 56	20, 485 88	114, 995 44	136, 190 80	251, 186 24	....	41, 540 06
New York	197, 576 76	84, 306 34	3, 214 70	2, 449, 663 72	2, 734, 761 52	442, 988 73	323, 959 54	766, 948 27	483, 430 12	1, 250, 378 39	....	1, 484, 383 13
New Jersey	21, 480 76	11, 229 78	336 50	208, 996 94	242, 043 98	87, 102 44	10, 407 00	97, 509 44	100, 724 82	198, 235 26	....	43, 808 72
Pennsylvania	80, 744 83	42, 404 15	2, 683 75	1, 004, 892 74	1, 130, 725 47	299, 797 71	104, 866 67	404, 664 38	375, 809 74	780, 474 12	....	350, 251 35
Delaware	2, 069 75	2, 311 87	45 05	31, 173 52	35, 600 19	12, 255 34	2, 158 27	14, 413 61	19, 175 68	33, 589 29	....	2, 010 90
Maryland	17, 162 38	8, 919 74	466 95	205, 047 82	231, 596 89	56, 075 03	39, 496 01	95, 571 04	231, 867 71	327, 438 75	$95, 841 86	....
District of Columbia	8, 920 39	2, 626 42	655 85	217, 645 15	229, 847 81	4, 515 64	84, 982 86	89, 498 50	....	89, 498 50	....	140, 349 31
Virginia	7, 174 29	6, 590 61	347 10	147, 813 74	161, 925 74	40, 508 44	27, 781 43	68, 289 87	49, 088 93	117, 378 80	....	44, 546 94
North Carolina	369 57	82 06	18 50	16, 894 72	17, 364 85	3, 105 47	3, 358 72	6, 464 19	....	6, 464 19	....	10, 900 66
South Carolina	601 66	46 42	57 30	26, 479 97	27, 185 35	2, 495 14	1, 915 01	4, 410 15	....	4, 410 15	....	22, 775 20
Georgia	7 38	38 75	1 60	170 88	218 61	110 63	....	110 63	....	110 63	....	107 98
Florida	277 57	239 74	39 45	6, 616 86	7, 173 62	4, 008 95	5 00	4, 013 95	....	4, 013 95	....	3, 159 67
Alabama	1 02	17 30	30	52 69	71 31	37 76	....	37 76	....	37 76	....	33 55
Mississippi	39 71	42 86	85	273 52	356 94	189 36	....	189 36	....	189 36	....	167 58
Texas	1 72	15 01	....	64 19	80 92	42 86	....	42 86	....	42 86	....	38 06
Kentucky	12, 406 87	11, 113 32	234 20	191, 248 50	215, 002 89	68, 831 82	27, 923 73	96, 755 55	183 935 11	280, 690 66	65, 687 77	....
Michigan	21, 380 12	21, 322 62	678 80	275, 531 81	318, 913 35	117, 771 76	27, 858 05	145, 629 81	185, 599 87	331, 229 68	12, 316 33	....
Wisconsin	21, 104 34	22, 557 76	801 00	274, 164 81	318, 627 91	111, 362 98	15, 356 67	126, 719 65	159, 002 33	285, 721 98	....	32, 905 93
Louisiana	6, 201 23	1, 083 02	90 10	47, 356 53	54, 730 88	2, 599 84	12, 555 60	15, 155 44	....	15, 155 44	....	39, 575 44
Tennessee	3, 095 88	1, 603 77	67 35	161, 402 02	166, 169 02	4, 969 49	25, 502 23	30, 471 72	....	30, 471 72	....	135, 697 30
Missouri	19, 639 03	14, 906 50	468 05	273, 149 46	308, 163 04	70, 852 72	48, 820 66	119, 673 38	1, 302, 218 18	1, 421, 891 56	1, 113, 728 52	....
Illinois	47, 785 31	42, 738 50	1, 822 65	759, 513 48	851, 859 94	248, 037 94	120, 626 26	368, 664 20	355, 615 79	724, 279 99	....	127, 579 95
Ohio	66, 454 92	46, 438 86	1, 814 85	843, 076 90	957, 785 53	300, 897 12	89, 763 68	390, 660 80	544, 828 65	935, 489 45	....	22, 296 08
Indiana	38, 277 95	29, 754 62	835 95	350, 864 23	419, 732 75	167, 463 51	24, 523 49	191, 987 00	227, 613 05	419, 600 05	....	132 70
Arkansas	64	4 75	....	53 55	58 94	15 27	....	15 27	....	15 27	....	43 67
Iowa	15, 452 39	19, 456 54	572 00	228, 158 21	263, 639 14	106, 016 68	15, 483 39	121, 500 07	153, 302 09	274, 802 16	11, 163 02	....
California	22, 383 02	16, 421 92	672 85	279, 529 56	319, 007 35	61, 385 40	60, 500 55	121, 885 95	316, 556 55	438, 442 50	119, 435 15	....
Oregon	1, 886 71	1, 717 24	24 05	12, 750 11	16, 378 11	8, 839 23	91 88	8, 931 11	30, 869 93	39, 801 04	23, 422 93	....
Minnesota	6, 517 48	6, 819 74	195 85	64, 086 20	77, 619 27	33, 988 52	3, 742 66	37, 731 18	90, 408 65	128, 139 83	50, 520 56	....
Kansas	2, 551 36	2, 810 07	60 35	32, 204 57	37, 696 35	17, 561 66	1, 024 66	18, 586 32	63, 534 74	82, 121 06	44, 494 71	....

Utah Territory	920 10	242 06	8 80	2,955 86	4,126 82	2,074 53	63 47	2,138 00	13,025 00	15,163 00	11,036 18	
Nebraska Territory	1,139 16	1,258 09	14 55	10,700 24	13,112 04	6,713 90	77 56	6,791 46	38,197 72	44,989 18	31,877 14	
Washington Territory	795 14	334 73	9 70	3,607 81	4,747 38	3,463 17	20 18	3,483 35	32,848 92	36,332 27	31,584 89	
New Mexico Territory	601 72	160 96	3 70	2,417 70	3,184 08	1,982 15	62 90	2,045 05	44,848 24	46,893 29	43,709 21	
Colorado Territory	1,396 83	644 98	15 75	11,335 85	13,393 41	5,789 84	207 94	5,997 78	40,149 15	46,146 93	32,753 52	
Dakota Territory	269 34	51 52	90	1,525 34	1,847 10	1,014 79	3 00	1,017 79	3,011 51	4,029 30	2,182 20	
Nevada Territory	1,094 73	1,902 46	35 05	7,318 80	10,351 04	6,626 98	124 23	6,751 21	3,844 44	10,595 65	244 61	
	729,327 59	483,266 73	18,643 30	9,970,527 31	11,201,764 93	2,872,097 21	1,248,310 53	4,120,407 74	5,676,873 76	9,797,281 50	1,689,998 60	3,094,482 03
Deduct miscellaneous items	1,872 41	1,688 56		345,997 69	349,557 31							
Add miscellaneous items			1 35			4,886 13		4,886 13	78,346 33	432,789 77	432,789 77	
	727,455 18	481,578 17	18,644 65	9,624,529 62	10,852,207 62	2,876,983 34	1,248,310 53	4,125,293 87	5,755,220 09	10,230,071 27	2,122,788 37	3,094,482 03
On account of route agents, mail messengers, special transportation, foreign mails, &c.									786,360 24			
									6,541,580 33			
Deduct excess of expenditures												2,122,788 37
												971,693 66

NOTE.—The following items of *expenditure* and *revenue* are not embraced in the above statement, viz:

Amount paid for foreign mails and expenses of government mail agents	$358,728 75
Route agents	280,358 31
Supply of special offices and mail messengers	236,123 37
Ship, steamboat, and way letters	6,598 52
Letter carriers' fees	204,477 77
Dead letter money refunded	8 00
Wrapping paper	34,433 28
Office furniture	125 00
Advertising	2,554 61
Mail bags	32,382 73
Blanks	8,689 89
Mail locks, keys, and stamps	13,324 15
Mail depredations and special agents	45,719 39
Clerks for offices	7,713 55
Amount carried forward	1,231,237 32

Amount brought forward		$1,231,237 32
Postage stamps and stamped envelopes		86,032 66
Miscellaneous payments		27,705 74
Foreign postage collected and returned to foreign governments		177,567 35
Total expenditures		1,522,543 07
Excess of receipts over expenditures	$971,693 66	
Receipts on account of emoluments	100,407 35	
Receipts on account of letter carriers	204,477 77	
Receipts on account of fines	43 90	
Miscellaneous receipts	6,652 95	
		1,283,275 63
		239,267 44
Deduct difference between *paid* and *accrued* transportation		88,850 19
Total excess of expenditures over receipts		150,417 25

G. ADAMS, *Auditor*.

OFFICE OF THE AUDITOR OF THE TREASURY FOR THE POST OFFICE DEPARTMENT, *October* 30, 1863.

No. 4.—*Statement of the number of letters, circulars, newspapers, and pamphlets, received and delivered by carriers, and the amount received and paid out for carriage, in the cities named below, for the fiscal year ending June* 30, 1863.

Cities.	Number of letters.	Number of circulars.	Number of newspapers and pamphlets.	Total number of letters, circulars, &c.	Amount received and paid out to carriers.
New York, N. Y.	8,896,321	2,477,971	504,998	11,879,290	$116,267 91
Philadelphia, Pa.	3,243,074	....	299,360	3,542,434	33,927 54
Boston, Mass.	1,863,334	38,255	83,554	1,985,143	19,433 66
Baltimore, Md.	1,052,376	....	112,190	1,164,566	11,084 70
Brooklyn, N. Y.	696,702	....	64,372	761,074	7,288 87
Washington, D. C.	722,299	....	91,552	813,851	7,680 74
Providence, R. I.	289,126	....	15,230	304,356	2,967 41
St. Louis, Mo.	234,247	....	11,958	246,205	2,402 24
Lowell, Mass.	159,039	....	10,986	170,025	1,645 29
Manchester, N. Y.	103,330	....	1,376	104,706	1,040 18
Harrisburg, Pa.	71,145	....	5,563	76,708	739 22
	17,330,993	2,516,226	1,201,139	21,048,358	204,477 77

G. ADAMS, *Auditor.*

OFFICE OF THE AUDITOR OF THE TREASURY FOR THE
POST OFFICE DEPARTMENT, *October* 30, 1863.

No. 5.—*Amount of letter postage on British mails received in and sent from the United States, during the fiscal year ending June* 30, 1863.

Received.	Unpaid.	Unpaid distributed.	Paid.	Paid distributed.	Total.
Cunard line	$41,165 01	$41,393 59	$36,862 03	$38,711 59	$158,132 22
Canadian line	6,800 72	21,231 11	7,824 31	20,951 65	56,807 79
German Lloyd line	3,018 24	7,394 92	2,979 06	5,117 76	18,509 98
Hamburg line	1,958 41	4,784 71	1,714 80	2,957 20	11,415 12
Miscellaneous line	21,413 96	50,051 39	18,592 32	28,667 13	118,724 80
Total	74,356 34	124,855 72	67,972 52	96,405 33	363,589 91
Amount received	199,212 06	....	164,377 85	....	....

Sent.	Paid.	Paid distributed.	Paid stamps.	Unpaid.	Total.
Cunard line	$599 32	$79,578 38	$49,379 87	$63,300 90	$192,858 47
Canadian line	....	16,177 19	6,208 16	6,298 16½	28,683 51½
German Lloyd line	243 59	10,044 46	7,549 39	9,624 92	27,462 36
Hamburg line	144 12	8,303 87	5,755 43	7,817 94	22,021 36
Miscellaneous line	652 52	48,055 71	22,776 34	27,417 20	98,901 77
Total	1,639 55	162,159 61	91,669 19	114,459 12½	369,927 47½
Amount sent	255,468 35	....	....	114,459 12½	....

No. 5.—*Amount of letter postage, &c., on British mails*—Continued.

Amount collected in the United States	$454,680 41
Amount collected in the United Kingdom	278,836 97½
Total	733,517 38½
Excess collected in the United States	175,843 43½

G. ADAMS, *Auditor.*

OFFICE OF THE AUDITOR OF THE TREASURY FOR THE
POST OFFICE DEPARTMENT, *October* 30, 1863.

No. 6.

Amount of letter postage on Prussian mails received in and sent from the United States during the fiscal year ending June 30, 1863.

Received.	Unpaid.	Unpaid distributed.	Paid.	Paid distributed.	Total.
Cunard line	$7,675 03	$22,589 61	$3,306 40	$6,262 70	$39,833 74
Canadian line	2,892 30	14,257 51	971 43	3,054 25	21,175 49
German Lloyd line	1,700 44	8,246 85	668 24	1,802 96	12,418 49
Hamburg line	1,001 74	4,671 40	409 86	1,046 69	7,129 69
Miscellaneous line	3,745 86	18,396 11	1,675 56	3,795 44	27,612 97
Total	17,015 37	68,161 48	7,031 49	15,962 04	108,170 38
Amount received	85,176 85		22,993 53		
Sent.	**Paid.**	**Paid distributed.**	**Paid stamps.**	**Unpaid.**	**Total.**
Cunard line		$20,846 09	$8,189 49	$31,891 82	$60,927 40
Canadian line		4,013 42	1,027 08	5,696 24	10,736 74
German Lloyd line		4,733 85	928 92	1,938 16	7,600 93
Hamburg line		3,966 32	780 11	2,458 32	7,204 75
Miscellaneous line		8,938 81	2,069 17	7,062 30	18,070 28
Total		42,498 49	12,994 77	49,046 84	104,540 10
Amount sent	$55,493 26			49,046 84	

Amount collected in the United States	$140,670 11
Amount collected in Prussia	72,040 37
Total	212,710 48
Excess collected in the United States	68,629 74

G. ADAMS, *Auditor.*

OFFICE OF THE AUDITOR OF THE TREASURY
FOR THE POST OFFICE DEPARTMENT, *October* 30, 1863.

No, 7.

Amount of letter postage on French mails received in and sent from the United States during the fiscal year ending June 30, 1863.

Received.	Unpaid.	Unpaid distributed.	Paid.	Paid distributod.	Total.
Cunard line...........	$10,389 91	$10,325 28	$9,028 86	$11,321 70	$41,065 75
Canadian line.........	2,517 84	4,597 98	2,938 93	5,050 69	15,105 44
German Lloyd line....	1,666 79	2,279 41	1,476 43	1,872 93	7,295 56
Hamburg line.........	1,017 47	1,343 23	833 33	1,130 55	4,324 58
Miscellaneous line	3,211 39	4,887 37	2,669 92	4,072 63	14,841 31
Total.............	18,803 40	23,433 27	16,947 47	23,448 50	82,632 64
Amount received......	42,236 67	....	40,395 97	....	....

Sent.	Paid.	Paid distributed.	Paid stamps.	Unpaid.	Total.
Cunard line...........	$229 44	$13,243 69	$10,868 03	$22,416 09	$46,757 25
Canadian line.........	81	877 95	740 82	927 47	2,547 05
German Lloyd line....	67 41	3,184 74	2,321 86	5,355 08	10,929 09
Hamburg line.........	54 84	3,041 21	2,009 63	4,587 88	9,693 56
Miscellaneous line	160 29	4,849 76	3,463 59	8,072 82	16,546 46
Total.............	512 79	25,197 25	19,403 93	41,359 34	86,473 41
Amount sent..........	45,114 07	....	....	41,359 34	....

Amount collected in the United States............................	$87,350 74
Amount collected in France..	81,755 31
Total..	169,106 05
Excess collected in the United States	5,595 43

G. ADAMS, *Auditor.*

OFFICE OF THE AUDITOR OF THE TREASURY
FOR THE POST OFFICE DEPARTMENT, *October* 30, 1863.

No. 8.

Amount of letter postage on Belgian mails received in and sent from the United States during the fiscal year ending June 30, 1863.

Received.	Unpaid.	Unpaid distributed.	Paid.	Paid distributed.	Total.
Cunard line	$598 32	$567 54	$650 70	$676 41	$2,492 97
Canadian line	93 69	108 27	139 59	191 43	532 98
German Lloyd line	153 90	134 73	134 19	168 48	591 30
Hamburg line	77 22	79 11	100 18	87 21	343 72
Miscellaneous line	358 56	388 26	384 48	464 94	1,596 24
Total	1,281 69	1,277 91	1,409 14	1,588 47	5,557 21
Amount received	2,559 60		2,997 61		

Sent.	Paid.	Paid distributed.	Paid stamps.	Unpaid.	Total.
Cunard line		$492 75	$476 82	$2,285 01	$3,254 58
Canadian line		22 14	16 47	29 70	68 31
German Lloyd line		126 36	103 87	474 93	705 16
Hamburg line		101 79	78 03	387 83	567 65
Miscellaneous line	$0 54	174 42	159 84	744 12	1,078 92
Total	54	917 46	835 03	3,921 59	5,674 62
Amount sent	1,753 03			3,921 59	

Amount collected in the United States	$4,312 63
Amount collected in Belgium	6,919 20
Total	11,231 83
Excess collected in Belgium	2,606 57

G. ADAMS, *Auditor.*

OFFICE OF THE AUDITOR OF THE TREASURY
FOR THE POST OFFICE DEPARTMENT. *October* 30, 1863.

No. 9.

Amount of letter postage on Bremen mails received in and sent from the United States during the fiscal year ending June 30, 1863.

Received.	Unpaid.	Unpaid distributed.	Paid.	Paid distributed.	Total.
German Lloyd line	$2,130 36	$8,499 00	$1,676 47	$4,570 99	$16,876 82
Total	2,130 36	8,499 00	1,676 47	4,570 99	16,876 82
Amount received	10,629 36	....	6,247 46	....	....

Sent.	Paid.	Paid distributed.	Paid stamps.	Unpaid.	Total.
German Lloyd line	$54 00	$12,661 04	$4,280 35	$5,609 60	$22,604 99
Total	54 00	12,661 04	4,280 35	5,609 60	22,604 99
Amount sent	16,995 39	....	....	5,609 60	....

Amount collected in the United States	$27,624 75
Amount collected in Bremen	11,857 06
Total	39,481 81
Excess collected in the United States	15,767 69

G. ADAMS, *Auditor.*

OFFICE OF THE AUDITOR OF THE TREASURY
FOR THE POST OFFICE DEPARTMENT, *October* 30, 1863.

No. 10.

Amount of letter postage on Hamburg mails received in and sent from the United States during the fiscal year ending June 30, 1863.

Received.	Unpaid.	Unpaid distributed.	Paid.	Paid distributed.	Total.
Hamburg line	$2,996 73	$9,847 86	$2,039 60	$4,794 06	$19,678 25
Total	2,996 73	9,847 86	2,039 60	4,794 06	19,678 25
Amount received	12,844 59	....	6,833 66	....	....

Sent.	Paid.	Paid distributed.	Paid stamps.	Unpaid.	Total.
Hamburg line	$24 20	$22,545 71	$6,985 85	$9,393 65	$38,949 41
Total	24 20	22,545 71	6,985 85	9,393 65	38,949 41
Amount sent	29,555 76	....	....	9,393 65	....

Amount collected in the United States	$42,400 35
Amount collected in Hamburg	16,227 31
Total	58,627 66
Excess collected in the United States	26,173 04

G. ADAMS, *Auditor.*

Office of the Auditor of the Treasury
for the Post Office Department, *October* 30, 1863.

No. 11.

Number of letters and newspapers exchanged between the United States and the United Kingdom, in British mails, during the fiscal year ending June 30, 1863.

	Number of letters.		Number of newspapers.	
	Received.	Sent.	Received.	Sent.
Cunard line	703,821	808,143	428,867	812,766
Canadian line	228,808	115,952	54,922	125,443
German Lloyd line	78,546	108,787	42,913	136,977
Hamburg line	47,367	87,707	27,860	97,211
Miscellaneous line	503,785	400,654	211,355	415,229
Total	1,562,327	1,521,243	765,917	1,587,626

G. ADAMS, *Auditor.*

OFFICE OF THE AUDITOR OF THE TREASURY
FOR THE POST OFFICE DEPARTMENT, *October* 30, 1863.

No. 12.

Number of letters and newspapers exchanged between the United States and the Kingdom of Prussia, in closed mails, during the fiscal year ending June 30, 1863.

	Number of letters.		Number of newspapers.	
	Received.	Sent.	Received.	Sent.
Cunard line	130,940	202,926	9,111	47,795
Canadian line	69,719	33,402	4,883	5,650
German Lloyd line	40,258	25,976	4,600	15,756
Hamburg line	23,343	24,681	2,240	12,031
Miscellaneous line	90,375	61,867	8,410	33,104
Total	354,635	348,852	29,244	114,336

G. ADAMS, *Auditor.*

OFFICE OF THE AUDITOR OF THE TREASURY
FOR THE POST OFFICE DEPARTMENT, *October* 30, 1863.

No. 13.

Number of letters and newspapers exchanged between the United States and France during the fiscal year ending June 30, 1863.

	Number of letters.		Number of newspapers.	
	Received.	Sent.	Received.	Sent.
Cunard line	249,638	300,574	38,657	130,736
Canadian line	89,354	15,011	11,758	5,299
German Lloyd line	43,936	69,431	10,216	32,229
Hamburg line	25,512	61,410	5,568	28,184
Miscellaneous line	88,102	104,908	19,876	54,089
Total	496,542	551,334	86,075	250,537

G. ADAMS, *Auditor.*

OFFICE OF THE AUDITOR OF THE TREASURY
FOR THE POST OFFICE DEPARTMENT, *October* 30, 1863.

No. 14.

Number of letters and newspapers exchanged between the United States and Belgium during the fiscal year ending June 30, 1863.

	Number of letters.		Number of newspapers.	
	Received.	Sent.	Received.	Sent.
Cunard line	9,221	12,054	5,405	1,194
Canadian line	1,975	258	923	108
German Lloyd line	2,190	2,608	893	268
Hamburg line	1,203	2,096	408	164
Miscellaneous line	5,909	3,996	2,139	435
Total	20,498	21,012	9,768	2,169

G. ADAMS, *Auditor.*

OFFICE OF THE AUDITOR OF THE TREASURY
FOR THE POST OFFICE DEPARTMENT, *October* 30, 1863.

No. 15.

Number of letters and newspapers exchanged between the United States and Bremen during the fiscal year ending June 30, 1863.

	Number of letters.		Number of newspapers.	
	Received.	Sent.	Received.	Sent.
German Lloyd line..................	137,065	166,803	10,148	139,968

G. ADAMS, *Auditor.*

OFFICE OF THE AUDITOR OF THE TREASURY
FOR THE POST OFFICE DEPARTMENT, *October* 30, 1863.

No. 16.

Number of letters and newspapers exchanged between the United States and Hamburg during the fiscal year ending June 30, 1863.

	Number of letters.		Number of newspapers.	
	Received.	Sent.	Received.	Sent.
Hamburg line	149,169	273,551	15,274	237,125

G. ADAMS, *Auditor.*

OFFICE OF THE AUDITOR OF THE TREASURY
FOR THE POST OFFICE DEPARTMENT, *October* 30, 1863.

No. 17.

Revenue to the United States, also to the United States Post Office Department, by the Cunard line, for the fiscal year ending June 30, 1863.

Total postage on British mails by the Cunard line		$350, 990 69
United States portion, being $\frac{5}{24}$ for the United States inland	$73, 123 06	
Add postage on 1,241,633 newspapers, at 2 cents each	24, 832 66	
		97, 955 72
The Post Office Department pays commission to postmasters on above, viz:		
For distribution on unpaid distributed received, $41,393 59, at 12½ per cent	5, 174 20	
For commissions to postmasters at offices where delivered, $41, 393 59, at 40 per cent	16, 557 43	
For distribution on paid distributed received, $38,711 59, at 12½ per cent	4, 838 95	
For commissions to postmasters at offices where delivered, $38,711 59, at 40 per cent	15, 484 64	
For distribution on unpaid sent, $63,300 90, at 12½ per cent	7, 912 61	
For commissions to postmasters at New York, Boston, and Philadelphia on—		
Unpaid received, $41,165 01, at 15 per cent	6, 174 75	
Paid sent, $599 32, at 15 per cent	89 90	
Paid stamps sent, $49,379 87, at 15 per cent	7, 406 98	
Newspaper postage, $24, 832 66, at 50 per cent	12, 416 33	
For distribution on paid distributed sent, $79,578 38, at 12½ per cent	9, 947 29	
		86, 003 08
Revenue to the Post Office Department		11, 952 64
Deduct United States inland		73, 123 06
Deficit to the Post Office Department		61, 170 42

G. ADAMS, *Auditor*.

OFFICE OF THE AUDITOR OF THE TREASURY
FOR THE POST OFFICE DEPARTMENT, *October* 30, 1863.

No. 18.

Closed mail account.

Lines.	Prussian received.		Prussian sent.		Canada received.		Canada sent.		California rec'd.		California sent.		Havana received.		Mexico received.	
	Letters.	News-papers.	Letters.	News-papers.	Letters.	News-papers.	Letters.	News-papers.	Letters.	News-papers.	Letters.	News-papers.	Letters.	News-papers.	Letters.	News-papers.
	Ounces.	*Number.*	*Ounces.*	*Number.*	*Ounces.*	*Number.*	*Ounces.*	*Number.*	*Ounces.*	*Number.*	*Ounces.*	*Number.*	*Ounces.*	*Number.*	*Ounces.*	*Number.*
Cunard	33,070¾	6,936	49,573½	41,154	32,258¾	224,301	26,412¼	70,169	7,165½	20,576	2,741	569	3,719½	8,953	100	452
Canadian................	13,290½	2,891	7,051¾	3,973	200	18	37	87	1,372	3,957	....	....	192½	256	20¼	95
German Lloyd............	10,934½	3,729	6,596½	13,071	53½	....	81¾	145	339¾	1,037	875	80	43½	74	5	12
Hamburg.................	5,825	2,004	4,873½	9,816	14¼	....	2¾	....	155	448	892½	87	40½	61	2	2
Miscellaneous	22,860¼	7,356	12,125¼	23,500	190½	60	740½	106	3,717¼	10,869	1,027	216	886	1,411	38¼	176
Total.................	85,981	22,916	80,220½	91,514	32,717	224,379	27,274¼	70,507	12,749½	36,887	5,535½	952	4,882	10,755	165½	737

G. ADAMS, *Auditor.*

OFFICE OF THE AUDITOR OF THE TREASURY FOR THE POST OFFICE DEPARTMENT, *October* 30, 1863.

No. 19.

Receipts and disbursements in closed mails between the United States and Prussia during the fiscal year ending June 30, 1863.

RECEIPTS.

Amount of postage on paid and unpaid sent....	$104, 540 10	
Deduct Prussian inland, $\frac{7}{30}$.............	24, 392 69	
		$80, 147 41
Amount of postage on paid and unpaid received..	108, 170 38	
Deduct Prussian inland, $\frac{5}{30}$............	18, 028 40	
		90, 141 98
Add newspaper postage on 143,580 newspapers sent, at 4 cents each..		5, 743 20
		176, 032 59

DISBURSEMENTS.

Amount paid Great Britain for carrying 24,898¼ ounces, at 61½ cents per ounce...............	15, 312 42½	
Amount paid Great Britain for carrying 8,172½ ounces, at 56½ cents per ounce.............	4, 617 46¼	
Amount paid Great Britain for carrying 31,867¾ ounces, at 57½ cents per ounce.............	18, 323 95½	
Amount paid Great Britain for carrying 17,705¾ ounces, at 52½ cents per ounce..............	9, 295 52	
Amount paid Great Britain for carrying 9,895¼ ounces, at 16½ cents per ounce, being British transit..................................	1, 632 71½	
Amount paid Great Britain for carrying 42,045 ounces, at 21½ cents per ounce, being British transit..................................	9, 039 67½	
Amount paid Great Britain for carrying 13,837¾ ounces, at 12½ cents per ounce, being British transit..................................	1, 729 71¾	
Amount paid Great Britain for carrying 16,807¾ ounces, at 17½ cents per ounce, being British transit..................................	2, 941 35¾	
Amount paid Great Britain on 143,580 newspapers, at 2 cents each.........................	2, 871 60	
Amount paid the Canadian line for carrying 20,342¼ ounces, at 40 cents per ounce.......	8, 136 90	
Amount paid the German Lloyd line for carrying 17,531 ounces, at 40 cents per ounce........	7, 012 40	
Amount paid the Hamburg line for carrying 10,698½ ounces, at 40 cents per ounce.......	4, 279 40	
Amount paid miscellaneous line for carrying 34,985½ ounces, at 40 cents per ounce........	13, 994 20	
Commission to United States postmasters......	52, 809 77¾	
		151, 997 10½
Revenue to the Post Office Department................		24, 035 48½

G. ADAMS, *Auditor.*

OFFICE OF THE AUDITOR OF THE TREASURY
FOR THE POST OFFICE DEPARTMENT, *October* 30, 1863.

No. 20.

Statement of letters and newspapers, with the several postages, conveyed by the West India line of ocean steamers during the fiscal year ending June 30, 1863.

Name of line.	Letters.	Newspapers.	Postage on letters received.	Postage on letters sent.	Total postages.
West India line	436,649	163,120	$29,266 99	$22,467 85	$51,734 84
Add newspaper postage, at 2 cents					3,262 40
Total postage					54,997 24

G. ADAMS, *Auditor.*

OFFICE OF THE AUDITOR OF THE TREASURY
FOR THE POST OFFICE DEPARTMENT, *October* 30, 1863.

No. 21.

Amount of postages on mails exchanged between the United States and the British provinces during the fiscal year ending June 30, 1863.

Amount on unpaid received	$26,762 22	
Amount on paid received	70,513 87	
		$97,276 09
Amount on unpaid sent	30,748 98	
Amount on paid sent	97,718 23	
		128,467 21
Total		225,743 30
Amount collected in the United States		124,480 45
Amount collected in the British provinces		101,262 85
Balance in favor of the United States		23,217 60

G. ADAMS, *Auditor.*

OFFICE OF THE AUDITOR OF THE TREASURY
FOR THE POST OFFICE DEPARTMENT, *October* 30, 1863.

No. 22.

*The United Kingdom of Great Britain and Ireland in account with the United States of America for the quarters ended June 30, September 30, and *December 31, 1862, (service of the Post Office Department.)*

Dr.			Cr.		
MAILS SENT.			**MAILS RECEIVED.**		
For postage on (1) unpaid letters from United States for United Kingdom	$41,691 54		For postage on (1) unpaid letters from United Kingdom for United States	$55,734 71	
For postage on (2) unpaid letters from foreign countries, &c., in transit through United States for United Kingdom.	3,426 68		For postage on (2) unpaid letters from foreign countries, &c., in transit through United Kingdom for United States.	2,344 36	
For postage on (3) newspapers in transit through United States for United Kingdom	27 90		For postage on (3) newspapers in transit through United Kingdom for United States	666 21	
For postage on (4) mis-sent, redirected, and returned letters.	32 12		For postage on (4) mis-sent, redirected, and returned letters.	74 52	
For postage on (5) closed mails for United Kingdom in transit through United States	8,119 57¼		For postage on (5) closed mails for United States in transit through United Kingdom	32,630 66¼	
		$53,297 81¼			$91,450 46¼
MAILS RECEIVED.			**MAILS SENT.**		
For postage on (6) paid letters from United Kingdom for United States	60,741 68		For postage on (6) paid letters from United States for United Kingdom	70,572 85	
For postage on (7) paid registered letters from United Kingdom for United States, &c	2,778 06		For postage on (7) paid registered letters from United States for United Kingdom	1,140 28	
For postage on (8) paid letters from foreign countries for United States upon which sea rate has been paid	6,688 86		For postage on (8) paid letters for foreign countries, &c., in transit through United Kingdom	12,597 34	
For postage on (9) paid letters for foreign countries, United States possessions, &c., in transit, &c	9 44		For postage on (9) paid newspapers for foreign countries, &c., in transit through United Kingdom	2,891 58	
For postage on (10) paid newspapers for foreign countries, United States possessions, &c., in transit, &c			For postage on (10) closed mails from United States in transit through United Kingdom	35,317 67	
For postage on (11) closed mails from the British office in transit through United States	18,701 44¾				122,519 72
		88,919 48¾	Foreign ports' packet postage account		4,724 77
For postage on "loose letters," (collected on the ships)		2,200 02	For postage on "loose letters," (collected on the ships)		
For postage on dead letters returned		1,296 40	For postage on dead letters returned		879 27
For overcharges		89 68	For overcharges		115 39
For discrepancies		41 80	For discrepancies		5 78
Balance		73,850 19¼			219,695 39¼
		219,695 39¼	Balance		73,850 19¼

* Dead-letter account and discrepancies for this quarter to be settled.

OFFICE OF THE AUDITOR OF THE TREASURY FOR THE POST OFFICE DEPARTMENT, *October* 30, 1863.

G. ADAMS, *Auditor*.

No. 23.

The Kingdom of Prussia in account with the United States of America from April 1, 1862, *to March* 31, 1863, *(service of the Post Office Department.)*

Dr. Cr.

MAILS SENT.		
For postage on (1) unpaid letters	$36,629 11	
For postage on (2) unpaid letters in transit through the United States	2,325 64	
For postage on (3) mis-sent, returned, and redirected letters	20 34	
		$38,975 09
MAILS RECEIVED.		
For postage on (4) paid letters	19,562 42	
For postage on (5) paid newspapers	1,180 99	
For postage on (6) paid letters for foreign countries, &c., in transit	849 30	
		21,592 71
For overcharges		92
For postage on dead letters returned to Berlin		836 41
		61,405 13
Balance		26,085 55

MAILS SENT.		
For postage on (4) paid letters for Prussia	$11,387 14	
For postage on (5) paid letters for States beyond the German-Austrian Postal Union	4,114 39	
For postage on (6) paid newspapers for Prussia	2,401 27	
		$17,902 80
MAILS RECEIVED.		
For postage on (1) unpaid letters from Prussia	12,327 30	
For postage on (2) unpaid letters from States beyond the German-Austrian Postal Union	4,761 36	
For postage on (3) mis-sent, returned, and redirected letters	39 34	
		17,128 00
For overcharges		2 37
For postage on dead letters returned to Washington		286 41
Balance		26,085 55
		61,405 13

OFFICE OF THE AUDITOR OF THE TREASURY FOR THE POST OFFICE DEPARTMENT, *October* 30, 1863.

G. ADAMS, *Auditor.*

No. 24.—*The General Post Office of Belgium in account with the General Post Office of the United States of America, for the quarters ended June* 30, *September* 30, *December* 31, 1862, *and March* 31, 1863.

DR. CR.

THE BELGIAN OFFICE DEBTOR TO THE UNITED STATES OFFICE.				THE UNITED STATES OFFICE DEBTOR TO THE BELGIAN OFFICE.			
Number of the articles composing the credit of the United States.	Origin and destination of the correspondence.	Number of single rates, (letters and printed matter.)	Sums due to the United States office.	Number of the articles composing the credit of Belgium.	Origin and destination of the correspondence.	Number of single rates, (letters and printed matter.)	Sums due to the Belgian office.
	TRANSMITTED BY THE UNITED STATES OFFICE.				TRANSMITTED BY THE BELGIAN OFFICE.		
1	Unpaid letters from the United States, for Belgium, at 20 cents per single rate	14,689	$2,937 80	1	Unpaid letters from Belgium, for the United States, at 7 cents per single rate	9,540	$667 80
2	Unpaid letters from the United States, for countries to which Belgium serves as an intermediate point, at 27 cents per single rate	4	1 08	2	Unpaid letters from Belgium, for countries to which the United States serves as an intermediate point, at — cents per single rate		
3	Letters, not prepaid or charged with the price of transit, sent from countries to which the United States serves as an intermediate point, for Belgium			3	Letters, not prepaid or charged with the price of transit, sent from countries to which Belgium serves as an intermediate point, for the United States		
4	Letters, not prepaid or charged with the price of transit, sent from countries to which the United States serves as an intermediate point, for countries to which Belgium serves as an intermediate point			4	Letters, not prepaid or charged with the price of transit, sent from countries to which Belgium serves as an intermediate point, for countries to which the United States serves as an intermediate point		
5	Newspapers and printed matter of every kind, not prepaid, &c., sent from countries to which the United States serves as an intermediate point, for Belgium			5	Newspapers and printed matter of every kind, not prepaid, &c., sent from countries to which Belgium serves as an intermediate point, for the United States		
6	Newspapers and printed matter of every kind, not prepaid, &c., sent from countries to which the United States serves as an intermediate point, for countries to which Belgium serves as an intermediate point			6	Newspapers and printed matter of every kind, not prepaid, &c., sent from countries to which Belgium serves as an intermediate point, for countries to which the United States serves as an intermediate point		
7	Unpaid letters badly directed by the Belgian post office		90	7	Unpaid letters badly directed by the U. States post office		1 07
	Unpaid letters resent		77	8	Unpaid letters resent		3 91

No. 24.—*The General Post Office of Belgium in account with the General Post Office of the United States of America*—Continued.

DR.				CR.			
THE BELGIAN OFFICE DEBTOR TO THE UNITED STATES OFFICE.				THE UNITED STATES OFFICE DEBTOR TO THE BELGIAN OFFICE.			
Number of the articles composing the credit of the United States.	Origin and destination of the correspondence.	Number of single rates. (letters and printed matter.)	Sums due to the United States office.	Number of the articles composing the credit of Belgium.	Origin and destination of the correspondence.	Number of single rates, (letters and printed matter.)	Sums due to the Belgian office.
	TRANSMITTED BY THE BELGIAN OFFICE.				TRANSMITTED BY THE UNITED STATES OFFICE.		
9	Letters for the United States, prepaid to destination, and proceeding from Belgium, at 20 cents per single rate....	10,955	$2,191 00	9	Letters for Belgium, prepaid to destination, and proceeding from the United States, at 7 cents per single rate....	6,025	$421 75
10	Letters for the United States, prepaid to destination, and proceeding from countries to which Belgium serves as an intermediate point, at — cents per single rate........	....	....	10	Letters for Belgium, prepaid to destination, and proceeding from countries to which the United States serves as an intermediate point, at — cents per single rate........	....	....
11	Newspaper and periodicals for the United States, prepaid to destination, and proceeding from Belgium, at 2 cents per single rate........	6,815	136 30	11	Newspapers and periodicals for Belgium, prepaid to destination, and proceeding from the United States, at 3 cents per single rate........	1,851	55 53
12	Newspapers and periodicals for the United States, prepaid to destination, and proceeding from countries to which Belgium serves as an intermediate point, at — cents per single rate........	....	....	12	Newspapers and periodicals for Belgium, prepaid to destination, and proceeding from countries to which the United States serves as an intermediate point, at — cents per single rate........	....	....
13	Printed matter other than newspapers and periodicals for the United States, prepaid to destination, and proceeding from Belgium, at 2 cents per single rate, by American packet........	1,780	35 60	13	Printed matter other than newspapers and periodicals for Belgium, prepaid to destination, and proceeding from the United States by American packet, at 3 cents per single rate........	94	2 82
	Printed matter other than newspapers and periodicals for the United States, prepaid to destination, and proceeding from Belgium, at 1 cent per single rate, by British packet........	1,121	11 21		Printed matter other than newspapers and periodicals for Belgium, prepaid to destination, and proceeding from the United States by British packet, at 4 cents per single rate........	138	5 52
14	Printed matter other than newspapers and periodicals for the United States, prepaid to destination, and proceeding from countries to which Belgium serves as an intermediate point, at — cents per single rate........	....	....	14	Printed matter other than newspapers and periodicals for Belgium, prepaid to destination, and proceeding from countries to which the United States serves as an intermediate point, at — cents per single rate........	....	....

15	Prepaid letters for countries to which the United States serves as an intermediate point, and proceeding from Belgium			15	Prepaid letters for countries to which Belgium serves as an intermediate point, and proceeding from the United States		
16	Prepaid letters for countries to which the United States serves as an intermediate point, and proceeding from countries to which Belgium serves as an intermediate point			16	Prepaid letters for countries to which Belgium serves as an intermediate point, and proceeding from countries to which the United States serves as an intermediate point		
17	Prepaid newspapers and printed matter of every kind for countries to which the United States serves as an intermediate point, and proceeding from Belgium			17	Prepaid newspapers and printed matter of every kind for countries to which Belgium serves as an intermediate point, and proceeding from the United States		
18	Prepaid newspapers and printed matter of every kind for countries to which the United States serves as an intermediate point, and proceeding from countries to which Belgium serves as an intermediate point			18	Prepaid newspapers and printed matter of every kind for countries to which Belgium serves as an intermediate point, and proceeding from countries to which the United States serves as an intermediate point		
19	Prepaid letters badly directed by the United States post office			19	Prepaid letters badly directed by the Belgian post office		40
	Dead letters returned to Belgium		13 37		Dead letters returned to the United States		15 96
	Total		5, 328 03		Total		1, 174 76

BALANCE.

The office of Belgium debtor to United States	$5, 328 03
The office of United States debtor to Belgium	1, 174 76
Balance due United States	4, 153 27

G. ADAMS, *Auditor.*

OFFICE OF THE AUDITOR OF THE TREASURY FOR THE POST OFFICE DEPARTMENT, *October* 30, 1863.

No. 25.

The General Post Office of France in account with the United States of America for the quarters ended December 31, 1861, *March* 31, *and June* 30, 1862, (*service of the Post Office Department.*)

DR.			CR.		
MAILS SENT.			**MAILS RECEIVED.**		
For postage on (1) unpaid letters from the United States for France and Algeria	$7,650 58		For postage on (1) unpaid letters from France and Algeria for the United States	$10,017 77	
For postage on (2) unpaid letters from the United States for countries beyond France	2,906 11		For postage on (2) unpaid letters from France and Algeria for countries beyond the United States	2 01	
For postage on (3) letters not prepaid, &c., for France and Algeria	2,558 00		For postage on (3) letters not prepaid, &c., for the United States	15,789 20	
For postage on (4) letters not prepaid, &c., for countries beyond France	421 21		For postage on (4) letters not prepaid, &c., for countries beyond the United States	24	
For postage on (5) letters badly directed by French post offices and returned, &c	11 86		For postage on (5) letters badly directed by the United States post offices and returned, &c	5 75	
For postage on (6) letters resent, &c	1 27	$13,549 03	For postage on (6) letters resent, &c	114 04	$25,929 01
MAILS RECEIVED.			**MAILS SENT.**		
For postage on (7) letters for United States, prepaid, &c., from France and Algeria	$6,582 58		For postage on (7) letters for France and Algeria from the United States	12,561 86	
For postage on (8) letters for United States, prepaid, &c., from countries beyond France	1,630 20		For postage on (8) letters for France and Algeria from countries beyond the United States	48	
For postage on (9) prepaid letters for countries beyond the United States from France and Algeria	1,138 13		For postage on (9) prepaid letters for countries beyond France from the United States	5,670 45	
For postage on (10) prepaid letters for countries beyond the United States from countries beyond France	25 52	9,376 43	For postage on (10) prepaid letters for countries beyond France from countries beyond the United States		18,232 79
For postage on "loose letters," (collected on the ships)			For postage on "loose letters," (collected on the ships)		
For postage on dead letters returned to France		1,585 50	For postage on dead letters returned to Washington		162 45
For postage on various letters, &c		24	For overcharges on various letters, &c		3 78
Balance		19,816 83			44,328 03
		44,328 03	Balance		19,816 83

G. ADAMS, *Auditor.*

OFFICE OF THE AUDITOR OF THE TREASURY FOR THE POST OFFICE DEPARTMENT, *October* 30, 1863.

No. 26.

The Post Office of Bremen, Germany, in account with the United States of America, from July 1, 1862, to March 31, 1863, (service of the Post Office Department.)

Dr.			Cr.		
MAILS SENT.			MAILS RECEIVED.		
For postage on unpaid letters from United States for Bremen.	$1,043 73		For postage on unpaid letters from Bremen for United States.	$6,393 96	
For postage on unpaid letters from United States for States beyond Bremen	97 83		For postage on unpaid letters from States beyond Bremen	....	
For postage on unpaid letters from foreign countries in transit through United States for Bremen, &c	33 04		For postage on unpaid letters for countries beyond United States	....	
For postage on missent, redirected, returned, &c., letters	69	$1,175 29	For postage on missent, redirected, returned, &c., letters	27	$6,394 23
MAILS RECEIVED.			MAILS SENT.		
For postage on paid letters from Bremen for United States	1,386 33		For postage on paid letters from United States for Bremen	603 00	
For postage on paid letters from States beyond Bremen for United States	....		For postage on paid letters from United States for States beyond Bremen	9,210 76	
For postage on paid letters for countries beyond United States.	142 44		For postage on paid letters from countries beyond United States for Bremen	....	
For postage on paid newspapers from Bremen for United States.	67 64		For postage on paid newspapers from United States for Bremen.	1,860 08	
For postage on paid pamphlets and magazines from Bremen for United States	15 39	1,611 80	For postage on paid pamphlets and magazines from Bremen for United States	32 73¼	11,706 57¼
For postage of loose letters collected on ships	....	....	For postage on registered letters	....	120 05
For postage on dead letters returned	....	455 45	For postage on loose letters collected on ships	....	....
Balance	....	15,390 84¼	For postage on dead letters returned	....	7 71
			For discrepancies	....	404 82
		18,633 38¼			18,633 38¼
			Balance	....	15,390 84¼

G. ADAMS, *Auditor*.

OFFICE OF THE AUDITOR OF THE TREASURY FOR THE POST OFFICE DEPARTMENT, *October* 30, 1863.

No. 27.

The Post Office of Hamburg, Germany, in account with the United States of America, from July 1, 1862, *to June* 30, 1863,* (*service of the Post Office Department.*)

DR.			CR.		
MAILS SENT.			MAILS SENT.		
For postage on unpaid letters from United States for Hamburg	$3,905 60		For postage on unpaid letters from Hamburg for United States	$8,207 06	
For postage on unpaid letters from United States for States beyond Hamburg	449 65		For postage on unpaid letters from States beyond Hamburg		
For postage on unpaid letters from foreign countries in transit through United States for Hamburg, &c	233 50		For postage on unpaid letters for countries beyond United States		
For postage on missent, redirected, returned, &c., letters	48		For postage on missent, redirected, returned, &c., letters	13 40	$8,220 46
		$4,589 23			
MAILS RECEIVED.			MAILS SENT.		
For postage on paid letters from Hamburg for United States	2,975 85		For postage on paid letters from United States for Hamburg	842 87	
For postage on paid letters from States beyond Hamburg for United States			For postage on paid letters from United States for States beyond Hamburg	18,409 33	
For postage on paid letters for countries beyond United States	352 01		For postage on paid letters from countries beyond United States for Hamburg		
For postage on paid newspapers from Hamburg for United States	166 69		For postage on paid newspapers from United States for Hamburg	4,557 41	
For postage on paid pamphlets and magazines from Hamburg for United States	12 48		For postage on paid pamphlets and magazines from Hamburg for United States	72 83¼	
		3,507 03			23,882 44¼
For postage on registered letters		106 50	For postage on registered letters		318 11
For postage of loose letters collected on ships			For postage on loose letters collected on ships		
For postage on dead letters returned			For postage on dead letters returned		
Balance		24,218 25¼			32,421 01¼
		32,421 01¼	Balance		24,218 25¼

*Discrepancies and dead-letter account to be settled.

G. ADAMS, *Auditor.*

OFFICE OF THE AUDITOR OF THE TREASURY FOR THE POST OFFICE DEPARTMENT, *October* 30, 1863.

Balances due the United Kingdom on the adjustment of accounts between the United States and the United Kingdom for the fiscal year ending June 30, 1863.

Second quarter, 1862	$22,892	92
Third quarter, 1862	26,226	51½
Fourth quarter, 1862, (discrepancies to be settled)	24,730	76
Total	73,850	19½

Balances due the United States on the adjustment of accounts between the United States and Prussia during the fiscal year ending June 30, 1863.

Second quarter, 1862	$5,983	45
Third quarter, 1862	6,247	63
Fourth quarter, 1862	7,134	27
First quarter, 1863	6,720	20
Total	26,085	55

Balances due France on the adjustment of accounts between the United States and France during the fiscal year ending June 30, 1863.

Fourth quarter, 1861	$5,935	21
First quarter, 1862	8,026	28
Second quarter, 1863	5,855	34
Total	19,816	83

Balances due the United States on the adjustment of accounts between the United States and Belgium during the fiscal year ending June 30, 1863.

Second quarter, 1862	$977	75
Third quarter, 1862	1,028	38
Fourth quarter, 1862	1,088	34
First quarter, 1863	1,058	80
Total	4,153	27

Balances due Bremen on the adjustment of accounts between the United States and Bremen for the fiscal year ending June 30, 1863.

Third quarter, 1862	$5,313	68
Fourth quarter, 1862	3,372	02½
First quarter, 1863	6,705	14
Total	15,390	84½

***Balances due Hamburg on quarterly accounts between the United States and Hamburg, for the fiscal year ending June* 30, 1863.

Third quarter, 1862	$5,115 16
Fourth quarter, 1862	6,674 82
First quarter, 1863	6,261 53½
Second quarter, 1863	6,166 74
	24,218 25½

Amount of postage accounted for on foreign dead letters sent from and returned to the United States, for the fiscal year ending June 30, 1863.

United Kingdom to United States	$879 27
Prussia to United States	286 41
Bremen to United States	7 71
Hamburg to United States	....
France to United States	162 45
Belgium to United States	15 96
United States to United Kingdom, (quarters ended June 30 and September 30, 1862,)	1,296 40
United States to Prussia	836 41
United States to Bremen	455 45
United States to Hamburg	....
United States to France	1,585 50
United States to Belgium	13 37

Amount reported as due the steamers of the Canadian line, being the sea postages for the fiscal year ending June 30, 1863.

Steamers.	Trips.	Amount.
Anglo Saxon	Round trip....July 3 and July 11, 1862	$939 62¼
Jura	Outward trip..July 4, 1862	374 08½
Hibernian	Round trip....July 9 and July 18, 1862	1,389 03
Norwegian	....do........July 15 and July 25, 1862	897 07
North American	....do........July 24 and Aug. 1, 1862	1,358 43¾
Nova Scotian	....do........Aug. 1 and Aug. 8, 1862	954 83½
Bohemian	....do........Aug. 7 and Aug. 15, 1862	1,299 00
Jura	....do........Aug. 12 and Aug. 22, 1862	935 72¼
Anglo Saxon	....do........Aug. 20 and Aug. 29, 1862	1,339 75¾
Hibernian	....do........Aug. 27 and Sept. 5, 1862	931 82¾
North American	....do........Sept. 4 and Sept. 12, 1862	1,410 65
Norwegian	....do........Sept. 11 and Sept. 19, 1862	955 30¼
Bohemian	....do........Sept. 19 and Sept. 26, 1862	1,399 18½

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*Discrepancies and dead-letter account to be settled.

Amount reported as due the steamers of the Canadian line—Continued.

Steamers.	Trips.	Amount.
Nova Scotian	Round trip....Sept. 26 and Oct. 3, 1862	$689 66¾
Anglo Saxon	....do........Oct. 1 and Oct. 10, 1862	1,566 09¾
Jura	....do........Oct. 9 and Oct. 17, 1862	892 51¼
Hibernian	....do........Oct. 15 and Oct. 24, 1862	1,546 52
North American	....do........Oct. 31 and Nov. 1, 1862	802 08¼
Norwegian	....do........Nov. 7 and Nov. 10, 1862	1,025 09½
Bohemian	....do........Nov. 11 and Nov. 14, 1862	1,299 95½
Nova Scotian	....do........Nov. 18 and Nov. 21, 1862	1,533 82¼
Anglo Saxon	....do........Nov. 25 and Nov. 28, 1862	888 14
Jura	....do........Nov. 27 and Dec. 6, 1862	1,614 17½
Hibernian	....do........Dec. 3 and Dec. 13, 1862	1,801 45
North American	....do........Dec. 10 and Dec. 20, 1862	1,718 99¼
Norwegian	....do........Dec. 19 and Dec. 27, 1862	1,393 08
Bohemian	....do........Dec. 28, 1862, and Jan. 3, 1863	1,568 69¾
Anglo Saxon	....do........Jan. 6 and Jan. 11, 1863	1,664 14¾
Nova Scotian	....do........Jan. 10 and Jan. 17, 1863	1,261 85¼
Jura	....do........Jan. 13 and Jan. 24, 1863	1,759 54¾
Hibernian	....do........Jan. 19 and Jan. 31, 1863	1,886 52¾
Norwegian	....do........Feb. 1 and Feb. 7, 1863	2,039 11½
Bohemian	....do........Feb. 11 and Feb. 14, 1863	1,837 08
North American	....do........Feb. 16 and Feb. 21, 1863	1,596 94½
Nova Scotian	....do........Feb. 23 and Feb. 28, 1863	1,898 53
Jura	....do........Feb. 25 and Mar. 8, 1863	2,128 69½
Hibernian	....do........Mar. 4 and Mar. 15, 1863	1,927 47½
Anglo Saxon	....do........Mar. 12 and Mar. 22, 1863	1,676 12¼
Norwegian	....do........Mar. 20 and Mar. 29, 1863	1,685 73
Bohemian	....do........Mar. 27 and Apr. 5, 1863	1,687 83¾
Nova Scotian	....do........Apr. 4 and Apr. 12, 1863	1,790 29¾
North American	....do........Apr. 11 and Apr. 19, 1863	1,666 52¾
Hibernian	....do........Apr. 18 and Apr. 25, 1863	1,622 35½
Jura	....do........Apr. 21 and May 2, 1863	1,640 46¼
Norwegian	....do........May 11 and May 15, 1863	927 45¾
St. Andrew	Outward trip..May 11, 1863	478 81½
Bohemian	Round trip....May 16 and May 22, 1863	1,357 70¼
Anglo Saxon	Inward trip...May 16, 1863	199 94½
North American	Round trip....May 24 and May 29, 1863	1,022 90¼
Hibernian	....do........May 27 and June 5, 1863	1,583 13½
Jura	....do........June 3 and June 12, 1863	1,071 70¼
Nova Scotian	....do........June 13 and June 19, 1863	1,270 80¼
Norwegian	Inward trip...June 24, 1863	1,029 95
Bohemian	Round trip....June 25 and June 26, 1863	1,343 28¼
St. Andrew	Inward trip...June 26, 1863	63 65¼
Total		72,643 40½

Amount reported as due the steamers of the German Lloyd line, being the sea postage for the fiscal year ending June 30, 1863.

Steamers.	Trips.	Amount.
Bremen	Outward trip..July 5, 1862	$1,196 69¼
New York	Round trip ...July 22 and Aug. 2, 1862	2,881 38½
Hansa	....do........Aug. 18 and Aug. 30, 1862	2,748 05¼
Bremen	....do........Sept. 2 and Sept. 13, 1862	3,089 95½
New York	....do........Sept. 15 and Sept. 27, 1862	3,056 16¼
Hansa	....do........Oct. 13 and Oct. 25, 1862	2,784 40
New York	....do........Nov. 12 and Nov. 22, 1862	3,011 34¼
Hansa	....do........Dec. 10 and Dec. 20, 1862	2,593 58½
New York	....do........Jan. 7 and Jan. 17, 1863	2,809 72
Hansa	....do........Feb. 9 and Feb. 14, 1863	2,818 13¾
New York	....do........Mar. 4 and Mar. 14, 1863	3,377 77¼
Hansa	....do........Apr. 1 and Apr. 11, 1863	3,043 48¼
New York	....do........Apr. 29 and May 5, 1863	3,514 77
Bremen	Outward trip..Apr. 25, 1863	1,863 19¼
Hansa	Round trip ...May 25 and June 6, 1863	3,338 81½
America	....do........June 7 and June 20, 1863	2,567 37½
Bremen	Inward trip..June 23, 1863	1,535 07¼
Total		46,229 91¼

Amount reported as due the steamers of the Hamburg line, being the sea postage for the fiscal year ending June 30, 1863.

Steamers.	Trips.	Amount.
Bavaria	Outward trip..June 28, 1862	$18 08
Teutonia	....do........July 12, 1862	8 80
Borussia	Round trip ...July 26 and Sept. 23, 1862	1,868 80¾
Teutonia	Outward trip..Sept. 5, 1862	32
Hammonia	Round trip ...Sept. 9 and Sept. 20, 1862	2,967 31¼
Saxonia	....do........Oct. 8 and Oct. 18, 1862	2,823 43
Hammonia	....do........Nov. 9 and Nov. 15, 1862	3,071 00½
Saxonia	....do........Dec. 4 and Dec. 13, 1862	3,142 54½
Bavaria	Inward trip...Dec. 22, 1862	13 86
Hammonia	Outward trip..Jan. 10, 1863	2,103 57
Saxonia	....do........Jan. 27, 1863	1,444 45½
Saxonia	Round trip ...Feb. 7 and Mar. 26, 1863	3,277 94¼
Borussia	....do........Feb. 25 and Mar. 7, 1863	4,047 29
Bavaria	Inward trip..Feb. 16, 1863	8 28
Saxonia	Outward trip..Apr. 3, 1863	2,334 18¼
Hammonia	Round trip ...Apr. 21 and May 2, 1863	3,005 46½
Borussia	....do........May 22 and May 29, 1863	3,099 61¼
Total		33,234 95¾

Amount reported as due the steamers of the miscellaneous line, being sea postages for the fiscal year ending June 30, 1863.

Steamers.	Trips.	Amount.
City of Baltimore..	Round trip ...July 1 and July 12, 1862	$5, 118 95
Glasgow	Outward trip..July 5, 1862............	379 20
Kangaroo........	Round trip ...July 10 and July 19, 1862	4, 880 07½
City of New York.	....do.........July 14 and July 26, 1862	3, 360 47
City of Washington	....do.........July 22 and Aug. 2, 1862	1, 693 28
Etna............	....do.........July 28 and Aug. 9, 1862	5, 070 24
City of Manchester	....do.........Aug. 8 and Aug. 16, 1862	3, 012 62½
City of Baltimore..	....do.........Aug. 12 and Aug. 23, 1862	4, 941 69
Glasgow	....do.........Aug. 20 and Aug. 30, 1862	1, 737 05
Kangaroo........	....do.........Aug. 27 and Sept. 20, 1862	3, 099 30¼
City of Washington	....do.........Sept. 3 and Sept. 6, 1862	3, 540 20¾
City of New York.	....do.........Sept. 9 and Sept. 13, 1862	1, 740 62
Edinburgh.......	....do.........Sept. 16 and Sept. 27, 1862	1, 628 55
Etna............	....do.........Sept. 22 and Oct. 4, 1862	4, 940 04¾
City of Baltimore..	....do.........Sept. 28 and Oct. 11, 1862	4, 294 23¾
City of Washington	....do.........Oct. 8 and Oct. 18, 1862	1, 637 94
City of New York.	....do.........Oct. 13 and Oct. 25, 1862	1, 431 93
Kangaroo........	....do.........Oct. 24 and Nov. 1, 1862	4, 504 44¾
Edinburgh.......	....do.........Nov. 1 and Nov. 8, 1862	4, 443 71
Glasgow	....do.........Nov. 10 and Nov. 15, 1862	1, 554 98½
City of Baltimore..	....do.........Nov. 12 and Nov. 22, 1862	1, 496 65
Etna............	....do.........Nov. 19 and Nov. 29, 1862	4, 430 06
City of Washington	....do.........Nov. 27 and Dec. 6, 1862	4, 705 58¼
City of Manchester	....do.........Dec. 5 and Dec. 13, 1862	1, 930 53½
Kangaroo........	....do.........Dec. 12 and Dec. 20, 1862	1, 435 04
Edinburgh.......	....do.........Dec. 20 and Dec. 27, 1862	4, 435 83
Glasgow	....do.........Dec. 28, 1862, and Jan. 10, 1863.................	3, 124 79¼
Etna............	....do.........Jan. 1 and Jan. 3, 1863	4, 933 59¼
City of Washington	....do.........Jan. 8 and Jan. 17, 1863	1, 592 26
City of Baltimore..	....do.........Jan. 15 and Jan. 24, 1863	5, 829 34¼
Kangaroo........	....do.........Jan. 20 and Jan. 31, 1863	5, 768 95
Edinburgh.......	....do.........Jan. 29 and Feb. 7, 1863	1, 959 87
City of Manchester	....do.........Feb. 10 and Feb. 13, 1863	2, 267 24
Etna............	....do.........Feb. 13 and Feb. 21, 1863	5, 729 88¼
City of Washington	....do.........Feb. 25 and Feb. 28, 1863	3, 937 63
Glasgow	....do.........Feb. 26 and Mar. 7, 1863	4, 045 04½
City of New York.	....do.........Mar. 5 and Mar. 14, 1863	1, 916 79
City of Baltimore..	....do.........Mar. 12 and Mar. 21, 1863	5, 708 53¼
Edinburgh.......	....do.........Mar. 21 and Mar. 28, 1863	5, 620 57¾
Etna............	....do.........Mar. 26 and Apr. 4, 1863	1, 863 45
City of Washington	....do.........Apr. 1 and Apr. 11, 1863	1, 973 50
Glasgow	....do.........Apr. 11 and Apr. 24, 1863	3, 078 73¼
City of New York.	....do.........Apr. 14 and Apr. 18, 1863	5, 556 57
City of Baltimore..	....do.........Apr. 21 and Apr. 25, 1863	1, 885 12
Edinburgh.......	....do.........Apr. 29 and May 2, 1863	1, 936 16
Etna............	....do.........May 5 and May 15, 1863	2, 929 38½
City of Manchester	Outward trip..May 9, 1863..........	751 36

Amount reported as due the steamers of the miscellaneous line—Continued.

Steamers.	Trips.	Amount.
City of Washington	Round trip ...May 12 and May 16, 1863	$5,466 45¼
City of New York.	....do........May 18 and May 22, 1863	3,678 30½
City of Baltimore..	....do........May 26 and May 29, 1863	2,110 21
Edinburgh.......	....do........June 3 and June 13, 1863	5,286 65¼
Etna............	Outward trip..June 5, 1863............	763 36
Glasgow	Round trip ...June 11 and June 19, 1863	1,868 58
City of Manchester	Inward trip...June 18, 1863............	2,748 74
City of New York.	Round trip ...June 21 and June 27, 1863	4,302 20½
Total	....	180,076 54¼

Amount reported as due the steamers of the South Pacific line for the fiscal year ending June 30, 1863.

Steamers.	Trips.	Amount.
	To and from New York:	
North Star.......	Outward trip..July 1, 1862	$126 81
Northern Light...	Round trip....July 1 and July 11, 1862	298 43
Champion	....do........July 7 and July 21, 1862	370 80
Ariel	....do........July 16 and Aug. 1, 1862	352 73
North Star.......	Inward trip...July 24, 1862............	18 14
Northern Light...	Outward trip..Aug. 11, 1862............	163 33
Columbia	Inward trip...Aug. 4, 1862............	230 18
Champion	Round trip....Aug. 11 and Aug. 23, 1862	373 20
Ariel	....do........Aug. 24 and Sept. 1, 1862	196 18
Northern Light...	....do........Sept. 3 and Sept. 11, 1862	357 85
North Star.......	Outward trip..Sept. 20, 1862...........	246 07
Champion	Round trip....Sept. 16 and Oct. 21, 1862	483 37
Ariel	....do........Sept. 26 and Oct. 1, 1862	227 00
Northern Light...	Inward trip...Oct. 4, 1862............	183 34
Ocean Queen.....	Outward trip..Oct. 11, 1862............	188 13
North Star.......	Inward trip...Oct. 13, 1862............	64 56
Ariel	Round trip....Oct. 24 and Nov. 1, 1862	388 59
Ocean Queen.....	....do........Nov. 3 and Nov. 11, 1862	371 58
Champion	....do........Nov. 13 and Nov. 21, 1862	284 02
Ariel	....do........Nov. 24 and Dec. 1, 1862	457 47
Ocean Queen.....	....do........Dec. 7 and Dec. 11, 1862	466 15
Champion	....do........Dec. 14 and Dec. 22, 1862	264 88
Ariel	....do........Dec. 28, 1862, and Jan. 1, 1863............	377 20
Ocean Queen.....	....do........Jan. 3 and Jan. 12, 1863	403 90
Champion	....do........Jan. 20 and Jan. 22, 1863	425 25
Ariel	....do........Jan. 25 and Feb. 2, 1863	313 66
Ocean Queen.....	Inward trip...Feb. 3, 1863............	189 24
Northern Light...	Outward trip..Feb. 11, 1863............	210 03
Champion	Round trip....Feb. 14 and Feb. 21, 1863	273 32

Amount reported as due the steamers of the South Pacific line—Continued.

Steamers.	Trips.	Amount.
Ariel	Round trip....Feb. 27 and Mar. 3, 1863	$326 79
Northern Light	....do........Mar. 6 and Mar. 11, 1863	378 93
Champion	Inward trip...Mar. 17, 1863	73 24
Ocean Queen	Outward trip..Mar. 21, 1863	195 81
Ariel	Round trip....Mar. 26 and Apr. 1, 1863	342 15
Northern Light	....do........Apr. 4 and Apr. 11, 1863	401 70
Ocean Queen	....do........Apr. 14 and Apr. 21, 1863	354 07
North Star	....do........Apr. 25 and May 2, 1863	233 05
Northern Light	....do........May 6 and May 13, 1863	368 85
Ocean Queen	....do........May 16 and May 23, 1863	401 05
North Star	Inward trip...May 24, 1863	96 66
Champion	Outward trip..June 3, 1863	163 71
Northern Light	Round trip....June 5 and June 13, 1863	402 89
Ocean Queen	....do........June 14 and June 23, 1863	272 38
North Star	Inward trip...June 26, 1863	92 96
	To and from San Francisco:	
Saint Louis	Round trip....July 1 and Aug. 6, 1862	62 93
Orizaba	....do........July 4 and July 11, 1862	66 65
Golden Gate	....do........July 10 and July 21, 1862	79 72
Golden Age	....do........July 24 and Aug. 11, 1862	63 52
Uncle Sam	Outward trip..Aug. 1, 1862	37 98
Orizaba	Round trip....Aug. 17 and Sept. 11, 1862	80 04
Sonora	....do........Aug. 21 and Sept. 26, 1862	69 87
Constitution	....do........Aug. 31 and Sept. 3, 1862	131 39
Golden Age	....do........Sept. 17 and Sept. 20, 1862	106 91
Sonora	....do........Oct. 1 and Nov. 6, 1862	98 85
Constitution	....do........Oct. 5 and Oct. 11, 1862	53 52
Orizaba	....do........Oct. 17 and Nov. 11, 1862	79 13
Saint Louis	....do........Oct. 21 and Nov. 26, 1862	100 57
Golden Age	....do........Oct. 27 and Nov. 1, 1862	92 53
Constitution	....do........Nov. 15 and Nov. 21, 1862	90 38
Saint Louis	....do........Dec. 1 1862, and Jan. 4, 1863	38 26
Golden Age	....do........Dec. 6 and Dec. 11, 1862	50 53
Orizaba	Inward trip...Dec. 18, 1862	55 95
Sonora	Round trip....Dec. 20, 1862, and Jan. 25, 1863	73 88
Constitution	....do........Dec. 27, 1862, and Jan. 1, 1863	97 59
Saint Louis	....do........Jan. 10 and Feb. 16, 1863	30 09
Golden Age	....do........Jan. 15 and Jan. 21, 1863	111 28
Sonora	....do........Jan. 31 and Mar. 11, 1863	75 06
Constitution	....do........Feb. 7 and Feb. 11, 1863	89 64
Saint Louis	....do........Feb. 21 and Mar. 28, 1863	62 23
Golden Age	....do........Feb. 28 and Mar. 2, 1863	78 97
Sonora	....do........Mar. 12 and Apr. 18, 1863	61 34
Constitution	....do........Mar. 20 and Mar. 23, 1863	69 98
Orizaba	....do........Apr. 3 and May 9, 1863	73 37
Golden Age	....do........Apr. 6 and Apr. 13, 1863	37 87

Amount reported as due the steamers of the South Pacific line—Continued.

Steamers.	Trips.	Amount.
Sonora	Round trip....Apr. 23 and May 28, 1863	$81 76
Constitution	....do........Apr. 28 and May 2, 1863	65 70
Orizaba	....do........May 13 and June 19, 1863	50 57
Golden Age	....do........May 19 and May 23, 1863	54 85
Saint Louis	Outward trip..June 3, 1863	36 00
Constitution	Round trip....June 6 and June 13, 1863	78 19
Orizaba	Outward trip..June 23, 1863	42 46
Golden Age	Inward trip...June 30, 1863	39 .05
Total		15,078 26

Amount reported as due the West India line of steamers for the fiscal year ending June 30, 1863.

Steamers.	Trips.	Amount.
British Queen	Inward trip...July 11, 1862	$94 15
Columbia	....do........July 11, 1862	934 48
Plantagenet	....do........July 16, 1862	75 67
Columbia	Round trip....July 16 and July 28, 1862	1,830 42¼
Plantagenet	....do........July 22 and Aug. 18, 1862	135 73
Columbia	....do........Aug. 6 and Aug. 21, 1862	2,005 14½
Plantagenet	....do........Aug. 21 and Sept. 16, 1862	135 38
Columbia	....do........Aug. 28 and Sept. 10, 1862	1 982 77½
British Queen	....do........Sept. 13 and Oct. 4, 1862	419 49½
Columbia	....do........Sept. 18 and Oct. 1, 1862	1,382 17
Talisman	....do........Sept. 20 and Oct. 14, 1862	128 87
Roanoke	....do........Sept. 27 and Oct. 25, 1862	875 89
Philadelphia	Inward trip...Sept. 27, 1862	69 68
Eagle	Round trip....Oct. 13 and Oct. 29, 1862	1,506 67¾
Saxon	Inward trip...Oct. 18, 1862	194 94
Talisman	Round trip....Oct. 21 and Nov. 16, 1862	151 83
Pacific	....do........Oct. 27 and Nov. 19, 1862	369 55½
Roanoke	....do........Oct. 30 and Nov. 25, 1862	418 86
British Queen	Inward trip...Nov. 1, 1862	11 76
Bio Bio	Round trip....Nov. 1 and Nov. 19, 1862	734 62
Matanzas	Inward trip...Nov. 1, 1862	41 84
Marion	....do........Nov. 3, 1862	49 56
Eagle	Round trip....Nov. 6 and Nov. 20, 1862	876 90½
British Queen	....do........Nov. 10 and Nov. 28, 1862	158 02¾
Union	....do........Nov. 15 and Dec. 2, 1862	606 73½
Talisman	....do........Nov. 20 and Dec. 15, 1862	140 70
Eagle	....do........Nov. 26 and Dec. 10, 1862	1,167 76½
Roanoke	....do........Dec. 2 and Dec. 28, 1862	580 72¼
Union	....do........Dec. 5 and Dec. 22, 1862	775 37
Columbia	....do........Dec. 6 and Dec. 28, 1862	475 60

Amount reported as due the West India line of steamers—Continued.

Steamers.	Trips.	Amount.
Creole	Inward trip...Dec. 9, 1862	$95 50
British Queen	Round trip....Dec. 9 and Dec. 28, 1862	77 84
Ella Warley	....do.........Dec. 13, 1862, and Jan. 1, 1863	452 21¼
Eagle	....do.........Dec. 17, 1862, and Jan. 6, 1863	800 00
Talisman	....do.........Dec. 20, 1862, and Jan. 14, 1863	217 07
Bio Bio	Inward trip...Dec. 24, 1862	66 48
Bio Bio	Round trip ...Dec. 20, 1862, and Jan. 29, 1863	697 82
Pacific	....do.........Jan. 3 and Jan. 24, 1863	344 68
Columbia	Inward trip...Jan. 6, 1863	328.01
British Queen	Round trip ...Jan. 6 and Jan. 25, 1863	152 32
Roanoke	....do.........Jan. 10 and Feb. 6, 1863	568 75
Eagle	....do.........Jan. 14 and Jan. 29, 1863	860 25½
Talisman	....do.........Jan. 22 and Feb. 14, 1863	174 65
Columbia	Inward trip...Feb. 1, 1863	273 74
Pacific	Round trip ...Feb. 2 and Feb. 24, 1863	607 74½
British Queen	....do.........Feb. 2 and Feb. 20, 1863	59 64
Tubal Cain	Inward trip...Feb. 2, 1863	19 67
Bio Bio	Round trip ...Feb. 4 and Mar. 3, 1863	555 68
Eagle	....do.........Feb. 4 and Feb. 20, 1863	1,157 13½
Sheldrake	....do.........Feb. 7 and Mar. 3, 1863	219 38
Columbia	....do.........Feb. 12 and Mar. 7, 1863	924 31¼
Roanoke	....do.........Feb. 14 and Mar. 10, 1863	367 58¾
Champion	Inward trip...Feb. 14, 1863	62 78
Talisman	Round trip ...Feb. 20 and Mar. 17, 1863	174 09
Eagle	....do.........Feb. 26 and Mar. 12, 1863	874 23¾
British Queen	....do.........Mar. 2 and Mar. 21, 1863	203 50¾
Sheldrake	....do.........Mar. 9 and Apr. 2, 1863	578 83
Bio Bio	Outward trip..Mar. 10, 1863	139 44
Melita	Inward trip...Mar. 16, 1863	99 12
Roanoke	Outward trip..Mar. 18, 1863	281 06
Eagle	Round trip ...Mar. 19 and Apr. 2, 1863	813 60
Melita	....do.........Mar. 21 and Apr. 15, 1863	126 00
Talisman	Outward trip..Mar. 21, 1863	76 44
Tubal Cain	Inward trip...Mar. 26, 1863	152 74
Plantagenet	Round trip ...Mar. 27 and Apr. 17, 1863	112 91
British Queen	....do.........Mar. 28 and Apr. 16, 1863	377 73
Columbia	Inward trip...Apr. 8, 1863	438 24
Eagle	Round trip ...Apr. 9 and Apr. 23, 1863	877 38
Roanoke	Inward trip ...Apr. 13, 1863	264 54
Columbia	Round trip ...Apr. 15 and May 7, 1863	591 58
Corsica	....do.........Apr. 25 and May 17, 1863	328 61½
Sheldrake	Inward trip ...Apr. 29, 1863	246 40
Eagle	Round trip ...Apr. 30 and May 13, 1863	931 98¼
Creole	Inward trip ...May 2, 1863	209 12
Roanoke	....do.........May 4, 1863	242 86

Amount reported as due the West India line of steamers—Continued.

Steamers.	Trips.	Amount.
Morning Star	Inward trip ... May 9, 1863	$167 94
Plantagenet	....do........May 14, 1863	73 99
Eagle	Round trip ... May 21 and June 2, 1863	1,088 21
Corsica	....do........May 23 and June 12, 1863	216 71¼
Roanoke	Inward trip ... May 24, 1863	678 72
Sheldrake	....do........June 1, 1863	219 73
Morning Star	....do........June 6, 1863	60 58
Eagle	Round trip ... June 10 and June 24, 1863	1,360 08
Plantagenet	Inward trip ... June 14, 1863	98 98
Roanoke	....do........June 15, 1863	416 24
Corsica	Outward trip .. June 20, 1863	71 19
Eagle	....do........June 30, 1863	577 44½
Total		40,584 87¼

G. ADAMS, *Auditor*.

OFFICE OF THE AUDITOR OF THE TREASURY
FOR THE POST OFFICE DEPARTMENT,
October 30, 1863.

REPORT

OF THE

COMMISSIONER OF AGRICULTURE.

DEPARTMENT OF AGRICULTURE,
Washington, D. C., January 1, 1864.

SIR: I have the honor to submit my second annual report:

Although the year just closed has been a year of war, on the part of the republic, over a wider field and on a grander scale than any recorded in history, yet, strange as it may appear, the great interests of agriculture have not materially suffered in the loyal States. With the exception of some fruitless incursions along the border, and the invasion of Pennsylvania and defeat of the insurgents on the now historic field of Gettysburg, the loyal people have everywhere enjoyed a "broad and quiet land," with abundant health and prosperity, while a wider territory has been cultivated and a larger yield realized, except where drought and frost interfered, than during any previous year. Notwithstanding there have been over one million men employed in the army and navy, withdrawn chiefly from the producing classes, and liberally fed, clothed, and paid by the government, yet the yield of the great staples of agriculture for 1863, as compared with the previous year, has been as follows, viz:

	1862.	1863.
Wheat, in bushels	169, 993, 500	191, 068, 239
Oats, in bushels	172, 520, 997	174, 858, 167
Corn, in bushels	586, 704, 474	449, 163, 894
Hay, in pounds	20, 000, 000	18, 500, 000
Tobacco, in pounds	208, 807, 078	258, 462, 413
Wool, in pounds	63, 524, 172	79, 405, 215

The comparison, with the exception of corn and hay, injured by drought and frost, is even more favorable for 1863, if instituted in regard to the general products of the farm.

This wonderful fact of history—a young republic carrying on a gigantic war on its own territory and coasts, and at the same time not only feeding itself and foreign nations, but furnishing vast quantities of raw materials for commerce and manufactures, proves that we are essentially an agricultural people that three years of war have not, as yet, seriously disturbed but rather increased industrial pursuits, and that the withdrawal of agricultural labor and the loss of life by disease and battle have been more than compensated by machinery and maturing youth at home, and by the increased influx of immigration from abroad. In spite of the vast influence of the enemies of free institutions in Europe, brought to bear on the masses of her people against our republic; notwithstanding the flame of civil war still rages within our borders, yet the tide of immigration was never stronger, healthier, or more promising. While some, as adventurers, seek this western world for military fame, stimulated by our large bounties and the chances of promotion, or to fight sincerely the battles of freedom and equality, the greater part come to labor, to enjoy independence and quiet, and to make happy, though humble, homes for themselves and their children.

According to the report of the New York commissioners of immigration, the number of immigrants arriving at that port during the eleven months ending November 30 of the year 1863 was 146,519, against 76,306 during 1862. This proportional increase holds good in respect to the other great ports of our country, independent of the large number of persons from Canada and other portions of America.

To an intelligent mind, and especially to every American, the causes of this increasing influx of foreign population, even during a period of war, are very evident and gratifying. I shall simply indicate some of these causes without discussing them at length.

In the first place, the present rebellion is being understood abroad in its true light—as a revolt against democracy, the rights of labor and human nature; and that the triumph of the government guarantees to immigration its great rewards of peace, prosperity, and freedom.

In the second place, none but actual citizens, or those who have legally declared their intention of becoming such, are liable to military service; while, at the same time, such aliens enjoy nearly all the advantages of citizenship. However manifestly unjust this immunity is to those who defend and support the state, yet it stands forth as a noble proof of the generosity of the republic towards all who, in foreign lands, oppressed and poor, desire to better their condition.

Again: the political, religious, and social institutions of the United States, such as the elective franchise; freedom of speech, of the press, and of worship; the separation of church and state; the tenure of the soil and of other property; the honorable condition and remuneration of labor; the cheapness of education, of food and raiment; the equality of all citizens in the courts; and the open and fair field in the race of public and private life—all these, and more, are justly attractive to the masses in Europe when properly explained and understood. And no better service could be rendered the government and the great cause of agriculture than the preparation and dissemination of correct knowledge throughout Europe respecting the United States as the country of immigration.

A fourth cause, attracting at this present time so many honest sons of toil from the farms and workshops of Europe to America, is the demand for general labor, especially agricultural, owing to the vast number of our citizens now in the army and navy, or who have perished in the defence of their country.

And lastly, as the more general and positive cause of all, may be stated the cheapness and fertility of some lands, and the cheapness and capability of other lands, in connexion with the provisions of the homestead act, by which the government offers, gratis, to each actual settler, 160 acres of the best unappropriated land. Besides this free grant, the government offers vast tracts of land at $1 25 per acre; while improved or exhausted farms, in all parts of our country, may be purchased on the most favorable terms.

In this connexion there are several topics worthy of most serious consideration, and to which I desire briefly to call attention.

Whatever, owing to the war and the march of events, may be the future condition of land and labor in the rebellious States, or the legal decisions of the courts arising out of confiscation, litigation, or the demands of the military service, yet a great change must gradually take place, not only in the tenure of the soil and its modes of culture, but in the people themselves and their institutions. Much of the land will gradually pass out of the hands of its present proprietors, either by purchase, the decision of the courts, or by the force of circumstances. Many estates will be divided into smaller farms and occupied by the humbler classes in the south, whites and freed men, and by industrious and enterprising settlers from the other States and from Europe. The old fallacy, so long inculcated by politicians and accepted by the people, like many other fallacies respecting the south, that none but negroes can toil there, will be thoroughly exploded during the present generation. Once divide there the vast estates, and elevate labor to its true dignity by hiring, instead of owning it, and I venture the prediction that in less than ten years after the close of the war, over a million of industrial classes, native and foreign, will have settled in the sunny south, making it teem with new beauty, progress and wealth. The tides of immigration which now flow across the sea, and sweep with such irresistible power, bearing and leaving in their course the rich deposits of industry and art, of prosperity and life, will then divide at the Alleghanies and equally enrich the hills, the valleys, and savannas of the south.

The great laws governing the flow of population are as palpable as those governing the physical world; and these laws should be studied and heeded by our legislators if they desire to populate and develop, equally, every part of our country. Men who have been oppressed in the Old World, and have yet manhood enough left to seek a free life in the New, will not settle in the mild latitudes of the south, where labor is legally degraded, but go, though it be to the forests and winter snows of the northwest, where labor is honorable in all.

Now, in respect to the south, with its magnificent zones of climate and naturally fertile soil, there is no question but that her agricultural products and general prosperity will be vastly increased by the new condition of things imposed upon her by the rebellion. Terrible as is the ordeal, time, moderation, freedom and industry will be the great healers and rectifiers; so that it shall be seen that even war offers its compensations as well as peace. Plantations that now contain from three to five thousand acres of land will be divided into farms of from three to five hundred acres, which can be more easily and better tilled, and made far more productive. While the south will continue to grow the great staples, such as cotton, sugar and rice, many other semi-tropical productions may be introduced, of equal value, and more easily cultivated, together with all the cereals, grasses, fruits and vegetables of the temperate zone.

The half has not been told or tested in regard to the capabilities of the southern States. In times past, all their available skill and labor having been devoted to the cultivation of the great staples, no special attention was given to other crops of equal value and more developing to the country. With smaller farms and intelligent and interested labor, the following, among other articles, might be introduced and successfully cultivated in the south: the tea and coffee plants, the opium poppy, the vanilla, ginger, castor bean, assafœtida, wax and quassia plants, silk cocoons, gum-arabic, mastic and camphor trees, the Chinese yam, the sweet chestnuts, the earth and other almonds of southern Europe, the Persian walnut, the cork and gall-nut oak, the arrow, licorice, and orris roots, various valuable hemps and grasses, the prune, fig, date, pomegranate, olive, tamarind, guava, nectarine, shaddock, pine apple and pistache, Iceland moss, the cochineal, indigo, dyer's madder, frankincense, balsam, Egyptian senna, and various other productions which we now purchase abroad at an annual expense of many millions of dollars.

The articles above enumerated form but a small portion of the possible productions of the south; while she is known to be capable of yielding, not only the great staples of commerce and manufactures, but an abundance of food, if sufficient attention was paid to its cultivation.

Although discussion on the subject of exhausted and abandoned lands of the south and the best modes of reclaiming them would be, just now, a most valuable contribution to the agricultural needs and changing condition of the country, yet I have not, at present, the data necessary for such an undertaking; let me call attention, therefore, more especially to Virginia, one of the greatest but most neglected States of the Union.

Virginia contains 39,265,280 acres of territory, only 11,435,954 of which are under cultivation of one sort or another, the remainder being wild, worthless, or abandoned land. In 1860 the total population of the State was 1,596,318; 490,865 being slaves, who were owned by some 55,000 masters. At that time the actual number of whites over fifteen years of age engaged in agriculture was only 108,304. The rebellion has materially altered these figures, and completely ruined whatever of prosperity slavery had not yet destroyed. Nature, however, has done everything for the "Old Dominion;" and time and free institutions will yet vindicate her ancient generosity, abused and tempted though she has been to the very verge of exhaustion by a false and shiftless husbandry.

Among the productions of Virginia, as enumerated in the last census, were wheat, corn, rye, oats, tobacco, cotton, rice, wool, pulse, sweet and other potatoes, barley, hops, flax, hemp, silk cocoons, maple, cane and sorghum molasses, honey, buckwheat, hay, butter, cheese, clover and grass seeds, the various fruits and vegetables of the temperate zone, superior cattle, sheep, horses, and mules, besides a wealth of game and shell-fish on all the tide-waters of the State. Besides these, Virginia is capable, according to the laws of the isothermal zones of climate, of producing a much wider range of products. She is extremely well watered, affording an abundance of moisture to the soil, while her water-power is not surpassed by any State. Her sea-coasts, bays, and navigable streams afford easy access to the best markets, while her great estuary offers sites for cities, whose commerce, fed by free institutions, might rival the chief marts of the country.

The mineral wealth of Virginia is equal to that of almost any other State, but it has not been greatly developed. Besides gold, there are numerous and vast beds of iron, copper, and lead ore; the hematite iron ore of the valley of Virginia, especially, yielding a very superior metal. Other portions of the State possess vast deposits of gypsum, marl, salt, and coal, with oil wells and mineral springs.

The valley of Virginia, elevated in position and watered by the Shenandoah and the affluents of the James, is exceedingly fertile, and, owing to its extensive limestone formations, must ever continue a great wheat-growing region. On the other hand, Eastern Virginia is composed wholly of tertiary sands, clay, and marls; the latter deposits being found, of course, along the borders of the Chesapeake and Atlantic. Some of the strata of Eastern Virginia abound in fossil shells, and little altered in appearance from those of living beds along the coast, and furnish most valuable material for fertilizing the worn-out lands.

The soil of the tide-water region is a light sandy loam, capable, with proper culture, of yielding well, but at present it is about exhausted under the vicious system of tillage practised there for several generations. All the worn-out ands of Virginia can be easily brought up to their former fertility by ploughing a little deeper, and by the application of lime to correct the acidity of the soil. Lime decomposes the organic matter in the soil and frees the carbonic acid. It acts, also, upon the silicious alkaline and earthy salts, decomposing them and allowing such combinations as the plants require. The free use of gypsum and marl, also abundant in various parts of the State, would soon redeem the exhausted land.

Without dwelling upon the general advantages of Virginia, I desire to call attention to one or two special points.

The soil and climate of the State are finely adapted to the cultivation of grasses and the raising of stock, especially sheep. It was stated by the late Peter A. Brown, who had in his cabinet specimens of wool from all parts of the world, that the wool from Virginia had more life and better working qualities than any other that had ever come under his microscopic examination.

Owing to climate, diversity of surface, and the abundance of iron in the soil, Virginia is well adapted to all kinds of fruit, especially grapes, which are rapidly becoming one of the great crops of the country.

At the close of our unnatural and causeless war, Virginia, whose soil has been so often pressed by hostile armies and moistened by the best blood of the republic, will begin a new and a better life. Centrally situated, with water-sheds looking eastward and westward over a vast empire of free and hopeful men, blessed with a salubrious climate, and so many and such vast natural advantages, she will be settled, at an early day, by a vigorous and progressive people.

Without dwelling further on general topics, I desire to call attention to the *labors* and expenditures of the Department of Agriculture during the past year; to what it proposes to accomplish during the coming year, and to the increased appropriation necessary to enable it thoroughly to fulfil its mission.

A belief in the importance of agricultural statistics had been gaining strength in the minds of our thinking men for a long time. But the events of the last two years, and the present condition of the United States in themselves, and relatively to other nations, has wrought a thorough conviction that an absolute necessity existed in our country, so essentially agricultural, upon which other nations are so largely dependent for food supplies, and with which the interests of trade and commerce are so closely interwoven, that more reliable information must be obtained as to the supply, present and prospective, of the various crops which would be required to meet the demands of home consumption and for foreign export. To get the facts from which reliable estimates might be made, required my first attention after the organization of the department, and gave me no little anxiety.

The joint resolution of Congress, passed March 3, 1863, that "the heads of the several departments of government be required to furnish the Superintendent of Public Printing with copies of the documents usually accompanying the annual reports on or before the first day of November of each year," could not have been intended to apply to this department, whose duties, under the organic act, in "the collection of statistics," could not possibly be concluded by that time.

To accomplish this great and very important object, has required a large amount of time and labor, and, notwithstanding many difficulties, the work, thus far, has been accomplished to the satisfaction of the farmers of the country.

Although very much indebted to the full and complete returns of the Census Bureau, yet such were the extraordinary changes which had occurred in this country since those were taken, in the diversion of laborers from the farm to the defence of their country; in the change of so many from producers to mere consumers; in immigration; in the unusual increase and consumption of some productions, and diminution of others, that I found other and additional sources of information necessary.

A system of correspondence was attempted with reasonable success. The secretaries of the various agricultural societies and farmers' clubs are the proper persons to furnish, themselves or by others, the desired facts. In many cases, they have done this faithfully and earnestly; others having neglected it, intelligent and active farmers and business men of all professions were prompt to supply the deficiencies.

Societies and clubs should be formed in every part of the country with competent and efficient officers, and all such organizations which now exist should be officered by such men. The societies and the farmers composing them would then be brought in direct connexion with the department, with results beneficial both to themselves and the government.

About two thousand circulars, with questions plainly put, and requiring but simple answers, have been sent monthly to correspondents in every State and almost every settled county, the replies to which, requiring much labor in their compilation and arrangement, have been, with reports on the weather from observers of the Smithsonian Institution, and with other timely suggestions from the department, published monthly, ten to fifteen thousand in number, and spread over every portion of the country.

The success attending the first attempt of our government to collect the agricultural statistics of the country is attested by the newspaper press all over the land, commercial and political, as well as agricultural; and is an indication of what might be done in a well arranged plan, provided for by Congress, and carried out by governmental aid. There have been issued in all about 20,000 circulars of inquiry; and sent out, about 70,000 monthly reports.

It may be proper to remark here, that my first annual report, embracing a vast amount of valuable and timely agricultural information and statistics, furnished by able contributors, has been published and distributed during the year, for the benefit of farmers generally.

The meteorological reports published by the department have been furnished through the kindness of Professor Henry, of the Smithsonian Institution, taken from the registers of more than a hundred observers, at various points in almost every loyal State, and have been read with deep interest by the people.

It is believed that immense benefits would accrue to the country, if, from various stations, the condition of the weather could, under the direction of the government, be daily reported by telegraph to this department.

In this connexion I beg to allude to one of the difficulties in the way against the successful working of the department. Under the postal law of March, 1863, this department is debarred from receiving any article, or communication even, except the postage be prepaid. The 42d section provides that "all correspondence addressed to any executive department, or any officer in it, must now be prepaid, except official communications written by some officer of the department, or an officer under its control or responsible to it." As there is not, and cannot be, any such officer "responsible" to this department, I have been obliged at a considerable expense to forward to all the "correspondents" and to Smithsonian observers prepaid envelopes and stamps for their returns.

This, however, I do not regard as the most objectionable feature; but every inquiry or item of information concerning any tree, plant, fruit, or seed; any noxious or beneficial insect; any disease attacking plants or animals, communicated to this department, although inuring to the benefit of the whole country, must be taxed upon the individual who makes the inquiry, sends the information, or forwards the specimens of seeds, plants, or insects, sometimes quite heavily—in some cases so heavily that communication is entirely barred. As all information received by this department is the gratuitous, unpaid gift of the people, I venture to express the hope that Congress will early so amend the law that the farmers of the country may be put in free communication with a department created for their benefit.

The great, imperative, and increasing calls upon the department for seeds of all kinds, from all sections of the country, especially from the west and from the border States, where the desolations of war with the rebels and the Indians had destroyed the crops of the preceding year, gave me an early and loud warning that it would be no light labor to comply with that part of the act requiring me "to procure and distribute new and valuable seeds."

Pursuing what I regarded as the most judicious and satisfactory course, I imported from England, France, Belgium, Russia, Sweden, and other foreign countries, several hundred bushels of choice wheat and other cereal grains, and several thousand dollars' worth of the most valuable seeds for field and garden culture, including a large collection of such flower seeds as were deemed suitable for our country. These, with an assortment of the choicest varieties of the most desirable grains and vegetables grown in our own country, were spread over the country with a lavish hand.

In addition to these, about fifteen hundred bushels of cotton seed were procured, packed, and distributed mainly among the farmers of the west. There was, too, a very great demand made upon the department for tobacco seed, which was not readily found in many parts of the country, but which, fortunately, I was prepared to supply, and by which the wealth of our country was increased millions of dollars.

Of the quality of these seeds and their products it is sufficient to say that, in reply to a question proposed to all the correspondents of the departments as to the seeds, the response was universal that the seeds were good and had produced most satisfactory results.

The whole number of packages of seeds, cereals, &c., distributed, is about 1,200,000. Of these, over half a million were sent or given directly to those applying for them. About 300,000 were distributed to members of Congress, and over 300,000 to agricultural societies. About 40,000 were quart packages of wheat and other cereal grains; about 950,000 garden and flower seeds; about 120,000 tobacco seed, and the remainder cotton, flax, &c.

The anxiety of the people of the country to obtain the seeds, and the satisfaction manifested at their reception, and the resulting productions, are a sufficient attestation that the distribution of valuable seeds by the department is a recognized custom and duty which may not be abandoned, the complaints of captious or interested parties to the contrary notwithstanding. And I hazard nothing in saying, that in no department of this government does the expenditure of a like sum confer upon so large a proportion of the people anything like the same amount of pleasure and substantial enjoyment.

The propagating and experimental garden, a most important branch of this department, in former years suffered much through incompetency and neglect. In order to remedy these evils, and, in so far as it may be possible, to make up for lost time, I have taken great pains to secure the services of a gentleman eminently well known in the department of science needed, to carry on, successfully, the experiments to be made.

During the year there have been distributed from the garden of the department about 25,750 articles, comprising vines, bulbs, cuttings, and plants. About one-half of these were distributed through members of Congress; the remainder has been sent for dissemination by agricultural and other rural associations.

While the introduction and propagation of new and valuable plants will always command a large share of attention as one of the principal objects of the garden, still it is believed that investigations having in view a more thorough knowledge of the diseases of plants, especially with reference to those of our more valuable and generally cultivated fruits, should receive more attention than formerly. Acting upon this belief, and being convinced of the immense importance of the grape crop as a fruit for general consumption, and more particularly in view of the extraordinary increasing interest now developing in regard to the production of native vines, an extensive correspondence has been opened with vineyardists in all parts of the country for the purpose of comparing the results of experience and observation in regard to the influences of soil and climate, as also the effects of varied treatment and the estimation of varieties. Much valuable information has thus been contributed, embracing a collection of facts, without which it would be impossible to reach intelligent conclusions.

It has been considered advisable, as one of the best modes of extending interest in pomological and horticultural pursuits, to establish examples in order to exhibit practically the results of varied modes of treatment and applications of systems. This feature is being extended, and is found to be of peculiar and special interest to visitors; and its results have already been repeatedly acknowledged by those most capable of appreciating such efforts.

The limited facilities of the present garden greatly retard the full development of this object. It is highly necessary to establish specimen orchards of the best fruits, in order to illustrate the best modes of culture, and arrive at a correct knowledge of the nomenclature of varieties of fruits. This want is now severely felt, and its fulfilment would be hailed with genuine delight by all who are fully alive to the growing importance of fruit culture.

The purposes of the garden, as a proper auxiliary to the department, will not be fully answered until a botanical collection and museum is established. It is a source of well-founded surprise by visitors to the capital of the nation that no systematic attempt has been advanced having in view the foundation of a museum of native vegetable products, or a general botanical garden of plants.

It is daily becoming more and more apparent that, in order to fully carry out the objects of this department, increased facilities must be secured for the extended cultivation of agriculture for the purposes of comparative experiment. In no other way can we arrive at the intrinsic value of new introductions, except by comparing them with those whose merits are already well established. Again, with reference to the varied operations and practical details of farming, the various implements employed in the cultivation and amelioration of the soil, the advantages or disadvantages of thick or thin seeding, under what conditions and with what crops they may be followed, the effects of draining, and the best and most economical modes of providing it, are only a few of the more immediately obvious objects as affording matter for study and investigation.

To accomplish more fully what I deem to be necessary for the full development of this branch of the department, it will be necessary to increase the glass conservatories and propagating houses, for which I have asked an additional appropriation.

I long ago perceived that the few acres of the propagating garden were quite too limited for the need of this department in its present organization, and that much more land would be required to carry out my ideas of what experimental ground should show. To do this effectually, and essentially for the benefit of the farmers of the country, there should be placed at the control of the department land enough to test the various grains, grasses, and seeds of every kind that may be offered, to try their genuineness, their soundness, their value, and the adaptability of any foreign ones to our own use.

I have especially felt the want of this the past year when suggestions have been made as to the practicability of growing various trees, shrubs, medicinal, and especially textile plants, either from foreign parts or spontaneous productions of our own forests or swamps, and it has seemed quite impossible to fulfil that paramount duty so emphatically set forth in the establishing act, "to test by cultivation the value of such seeds and plants as may require such tests; to propagate such as may be worthy of propagation, and to distribute them among agriculturists."

The Commissioner of Public Buildings, appreciating the difficulties under which I labored, very kindly gave me authority to use that portion of "reservation No. 2, between 12th and 14th streets west," of government grounds, and I at once made preparations to bring it into suitable cultivation, when I was notified that the use of it was essentially necessary to the War Department as a cattle-yard.

In the belief, however, that this want will be but temporary, it is hoped that Congress will make a permanent appropriation of it for the use of this department, with sufficient means for its improvement.

Entomology being one of the subjects mentioned in the act establishing this department, and the destruction of fruit and other crops by insects having now become so serious, I determined to make it an important branch of the department, and have employed a gentleman well known throughout the country as a skilful, practical entomologist, who has been paying special attention to the best modes of extirpating insects injurious to vegetation. Through him I have made arrangements to place on exhibition in the department his large collection of insects, accompanied with drawings and descriptions; also his valuable collection of *fac similes* of all the fruits of the country, together with his complete herbarium.

Indeed, the space assigned to the Department of Agriculture, of a half dozen rooms in the basement under the Patent Office, is too limited and inconvenient for any department of this government, and is not only insufficient for our present accommodations, but is a positive bar to any increased operations which I propose, and I call your Excellency's attention to the matter.

Congress having at its last session appropriated "$20,000 for investigations to test the practicability of cultivating and preparing flax and hemp as a substitute for cotton," I proceeded to carry its intentions into effect as soon as the appropriation became available.

I found, by communications from every part of the country, that much interest was felt in the matter, and that the people of the middle and western States especially did not confine the meaning of the appropriating clause merely to the preparation of flax for cotton machinery, but took the broader view concerning the cultivation and preparation of flax generally, and with reason, growing, as they do, nearly all the flax in the country. With the view of placing this investigation beyond all reasonable complaint or suspicion of partiality, I determined to intrust it in the hands of a commission, and accordingly, on the first of July, appointed Hon. J. K. Morehead, of Pittsburg, Pennsylvania, W. M. Bailey, of Providence, Rhode Island, and Dr. J. M. Warder, of Cincinnati, Ohio, as commissioners, whose names are a sufficient guarantee of industry, ability, and integrity.

The commission met at the department, and having organized, passed the following vote, which was duly published in the papers and by circulars widely spread throughout the country:

"*Resolved,* That the Commissioner of Agriculture be requested to issue an advertisement, by circular or otherwise, calling upon manufacturers and experimenters to send to this department, on or before the 20th day of November, samples of the fibres and fabrics prepared by them, to be accompanied, in all cases, by precise statements as to the various processes, and with estimates as to the probable expense per pound of the preparation of the material, and of the proportion of fibre that may be produced from a given quantity of the stalks or straw of flax and hemp."

The commission then adjourned to meet here early in December, when, after due action on its part, a report will be rendered to Congress.

In the hope of having at some future day the means and conveniences of introducing and testing foreign trees, plants, and vegetables, I have taken great pains to establish communications with our consuls residing in foreign parts and with great success. Many of them replied promptly, and forwarded desirable specimens of seeds and plants and much valuable information.

I desire specially to express the obligations I am under to the State Department for furnishing every facility for these communications, and for its attention and promptness in forwarding to this department everything of interest to the agriculturists of this country.

The balance of the appropriation for the fiscal year ending June 30, 1863, remaining unexpended on the 31st December, 1862, was $25,675 98; deficiency appropriation, March 3, 1863, Chap. 79, $20,000. The amount appropriated for the fiscal year ending June 30, 1864, is $95,000—February 25, 1863, Chap. 59. The expenditures from the 31st December, 1862, to the 30th November, 1863, for all purposes, amount to $87,792 96, leaving an unexpended balance of the appropriation for the fiscal year ending June 30, 1864 $52,883 02.

In reference to the special appropriation of $20,000 "for investigations to test the practicability of cultivating and preparing flax and hemp as substitutes for cotton," I have the honor to report that, up to this time, no portion of it has been expended.

In asking of Congress an increased appropriation for the next fiscal year, I desire to notice, very briefly, a statement frequently made by our public men, that agriculture does not need or desire legislative aid in any respect; in other words, that farmers only wish to be let alone. No doubt agriculturists object to injurious legislation as much as any other class of our citizens; but when the government aims directly to benefit the farmer, leaving him, however, free to accept or reject its aid, by the introduction of foreign stock, grains, grasses, roots, fruits, and other products, by imparting valuable information as the result of chemical analysis, of experiments in culture and machinery, by gathering and diffusing throughout the country valuable statistics relating to home and foreign crops, showing the excess or diminution of the same, in order to guide the farmer in the planting and disposal of his grain, there is no question as to their approval.

To increase, by the above and other means, the productiveness of the soil, is to increase the wealth and prosperity of the country.

Sir John Sinclair, the friend and correspondent of Washington, in urging upon legislators the importance of agriculture, advocated the widest possible diffusion of knowledge on the subject. To preserve the fertility of the soil; to free it from superfluous moisture; to cultivate it to the greatest advantage; to raise its products at the least expense; to gather and apply the best manures; to procure the best instruments of husbandry; to select the best stock; to feed them in the most judicious manner; to secure the harvests, even in the most unpropitious seasons; to separate the grain from the straw with economy and success; in short, to perform all the operations of agriculture in the most judicious manner—these are the points, with those before mentioned, to which the department of agriculture devotes its attention, and for the accomplishment of which it asks legislative aid. Everything which has a tendency to benefit the tillers of the soil is an advantage to the whole community, for their interests are reciprocal and inseparable; and as the general good is unquestionably promoted by the fostering of the agricultural interest, it becomes the duty of those who are intrusted with the management and direction of public affairs to give special attention to this great interest which lies at the foundation of our national greatness.

If we examine the history of those foreign countries which have attained the highest agricultural prosperity, it will be found that every one of them was generously aided by the government; and on the contrary, where legislators have neglected the interests of agriculture, their countries are backward in wealth, intelligence and prosperity. Indeed, the above observation is true in regard to the various States of our republic, where legislative aid has been extended or refused.

But agriculture should be fostered by our government just now on other and higher grounds. Agriculture feeds not only our own and other nations, but the subsistence of our immense army and navy, and the revenues on which the government relies for the payment of its immense current expenses, are derived, directly or indirectly, from the productions of our soil. And the more and the earlier we can increase these productions by the appliances of science and art, and by introducing improved seeds and valuable articles of produce, the easier and the sooner will the public debt of our country be extinguished. By such agricultural progress, not only will the yield per acre be increased, but also the value of the products themselves will be enhanced, and we shall be better enabled, year after year, to compete with other nations in supplying food to the millions of Europe, thus gathering wealth in return, and making our country more than ever the granary of the world, and our farmers the stay and staff of our government in all the vicissitudes of peace or war. Besides, agriculture is the great conservative element or interest of the republic. It is the parent of the physical and moral health of the State. Its patronage by the government *will certainly* increase its products. And finally, since agriculture is by far the most extensive and important interest of the country, and represented by much the largest body of citizens, it is manifestly unjust to neglect this, and foster inferior interests.

In concluding my report and in calling attention to the excellent agricultural contributions of my countrymen accompanying it, my thoughts turn, naturally, to the future of my beloved country. That future, to my mind, is full of promise to the next, if not this generation. Nations, like men, are made strong and self-reliant through trial; and unless our conscious and growing strength tempts us to military excesses abroad, our greatness is secured beyond all peradventure. A mighty colossus, resting firmly in the soil and acquiring development and strength by toil, by thought and by equity, our republic will dominate the western continent and adjacent seas, and command the fear and the respect of all nations.

ISAAC NEWTON, *Commissioner.*

The PRESIDENT.

The subject of enlarging canals between the valley of the Mississippi and the Atlantic was evidently regarded as the great question of the times, excepting always the duty of putting down the rebellion, and maintaining our national integrity.

Under the resolutions of the convention by which this committee was raised, our duty, as we conceive, is not to designate the manner in which ship and steamboat channel or channels may be opened between the Mississippi and the Atlantic, but to present the views of the convention upon the general subject to the President and Congress, leaving it for the government itself, in its wisdom, to determine the best and most judicious plan of effecting the great object.

The convention was entirely unanimous in the resolution that the construction or enlargement of the canals between the Mississippi and the Atlantic, with canals connecting the lakes, was of great national, military, and commercial importance, and that such enlargement to dimensions adequate to pass gunboats from the Mississippi to Lake Michigan, and from the Atlantic to and from the great lakes, would furnish the cheapest and most efficient means of protecting the northern frontier, and, at the same time, would promote the rapid development and permanent union of our whole country.

Your memorialists, in presenting the views of the convention to the Executive and Congress, will not attempt to go into details; they refer to the mass of facts and statements contained in the able reports of the Boards of Trade, and in the letters, surveys, &c., presented to the convention and embodied in its published proceedings.

NECESSITY OF SHIP CANALS BETWEEN EAST AND WEST.

The one great idea which your memorialists seek to impress upon Congress is the necessity of a great national highway in the form of a ship and steamboat canal between the Mississippi and the Atlantic.

This great *national highway* is demanded alike "by military prudence, the necessities of commerce, and political wisdom."

Your memorialists ask the attention of the government to some of the reasons, *military, commercial,* and *political,* why this work should be constructed.

1. *The military importance of the work.*

We have arrived at that period in our history in which the government should adopt a well-considered and systematic plan of defending the northern frontier. Indeed, the best means of doing this has long engaged the attention of the government. Reports from the War Department and surveys from the topographical corps, in great numbers, have been made, a large number of forts have been projected and surveyed, but little has as yet been done.

The importance of having command of the lakes, in case of a war with Great Britain, cannot be overestimated. In 1814, the Duke of Wellington declared that "a naval superiority on the lakes is a *sine qua non* of success in war on the frontier of Canada." The great military importance of the command of the lakes was illustrated in the war of 1812, and the victories of Perry on Lake Erie, and of McDonough on Lake Champlain, were decisive of the fate of the war on the northern border.

In our past history, in the old colonial and revolutionary wars, and in the late war with Great Britain, the principal attacks our country had to sustain were made from the Canadian frontier. But the defence of the northern frontier (always of great moment) has become, by the growth of the West, of incalculable importance. Certainly not less than one-third in value of the entire commerce of the nation passes over the lakes. Ten millions of people live upon their borders, and are directly interested in their security. The great cities which have grown up on their shores have become the largest grain depots of the world. Nowhere on earth are collected and distributed such vast amounts of food; and yet this commerce, vast as it is, these great cities and food-producing States, with their great granaries, lie entirely exposed, and invite, by their helpless condition, ravage and devastation.

We say confidently, that this condition of things will not be permitted to continue. The voice of the Northwest and of all the northern frontier will ask (and their just request will be cheerfully granted) adequate protection.

EXPOSED CONDITION OF THE NORTHERN FRONTIER AS COMPARED WITH THE ATLANTIC COAST.

We respectfully call the attention of Congress to the defenceless condition of the northern frontier, as compared, or rather as contrasted, with that of the Atlantic. Upon the defences of the Atlantic, exclusive of naval defences, there have been expended more than one hundred and fifty millions of dollars. Large additional appropriations were asked for and obtained at the last session of Congress, and yet the Atlantic shore is more than three thousand miles from a foreign foe. An ocean shields it from attack. It is defended by the strongest navy possessed by any nation on earth. For all this we pay cheerfully, nor do we question the propriety of these expenditures; we only ask that the northern line shall be no longer neglected.

Now, we earnestly call attention to the fact that our northern frontier, with its commerce, and cities, equal in value to the seaboard, and with a shore-line exceeding in length the Atlantic coast, is within rifle and cannon range, for a considerable distance, of the only great maritime nation which will ever give us serious trouble, and is entirely defenceless. We have no navy on the lakes, nor can we have, under existing treaties. We have neither forts nor fortifications, nor ordnance, nor navy yards. Our northern frontier is utterly without the means of defence.

DEFENCES OF CANADA.

Let us contrast our means of defence with those of our neighbors over the line. In 1817 it was provided by treaty between Great Britain and the United States, that both nations should dismantle their vessels of war on the lakes, and reduce their naval force on each side "to one vessel of one hundred tons burden on Lake Ontario, and one on Lake Champlain, each armed with one eighteen-pound cannon, and on the upper lakes to two such vessels armed with the like force."

Since this treaty, Great Britain has never lost sight of the security of her American Colonial Empire. She has expended many millions for its defence. She has large and important military defensive works at Kingston on Lake Ontario, at Malden at the mouth of the Detroit river, at Penetanguishene on Georgian bay, at Toronto, Niagara, Stanley, Windsor and Port Sarnia, and others extending west as far as the shores of Lake Superior, and beyond to Fort Williams and Fort Gary.

GREAT BRITAIN RELIES ON HER MILITARY CANALS, CONSTRUCTED FOR MILITARY PURPOSES.

But the main reliance of England for maintaining and securing her supremacy on the lakes, is upon her military canals. These she has constructed at great expense, to enable her to pass her gunboats from the ocean through the St. Lawrence to the lakes. These works were constructed with direct reference to their military uses.

The canals from Montreal, by way of the Ottawa river and interior lakes, to Kingston on Lake Ontario, were constructed avowedly as a military work by the Royal Engineers, under the direction of the British Ordnance Department. The preamble of the act of the Canadian Parliament authorizing the taking of lands for the purpose, recites, that

> "His Majesty has been pleased to direct measures to be immediately taken, under the superintendence of the proper *military department*, for constructing a canal connecting the waters of Lake Ontario with the Ottawa river, and affording a convenient navigation for the transport of *naval* and *military stores*."

In 1831, Colonel Dumford, of the Royal Engineers, in his testimony before a committee of the English Parliament, stated, that provision had been made for the defence of the lakes, and the canal being intended as a *military* work, fortifications should be erected at the entrance of the canal, and the immediate vicinity at Kingston. A fortress of very considerable strength has been built at Kingston. This canal was followed by the construction around the rapids of the St. Lawrence of a series of short canals, far transcending in capacity any commercial necessity at the time they were built, with locks 45 feet wide by 200 feet long and 8 feet deep.

She has also connected Lakes Erie and Ontario by the Welland canal, of great capacity, with locks 26 feet wide, 150 feet long, and water 11 feet deep.

Such are the means by which Great Britain, sagacious and persistent, and ever looking to the possibility of war, has provided for securing the control and supremacy on the lakes.

It was the confidence growing out of the condition above described, and a knowledge of our own defenceless condition, that induced the *London Times*, during the excitement growing out of the seizure of Slidell and Mason, to publish articles like the following:

> "ARMING THE NORTHERN FRONTIER AND THE LAKES.
>
> "The worst part of the struggle, however, will not be on the Atlantic seaboard, but on the great lakes of Upper Canada and North America. We are glad, therefore, to be able to tell our readers that *this danger has been foreseen*, and amply provided against, and that within a week after the breaking of the ice a whole fleet of gunboats, with the most powerful of screw corvettes sent out to Admiral Milne, will carry the protection of the British flag from Montreal to Detroit."

The exposed condition of the lakes has not escaped the attention of Congress. The committee on military affairs of the House of Representatives, through Hon. F. P. BLAIR, chairman, at the last session of Congress, called the attention of the country to this startling statement:

> "A small fleet of light draught, heavily armed iron-clad gunboats could in a short month pass up the St. Lawrence into the lakes, and shell every city from Ogdensburg to Chicago.
>
> "It could at one blow sweep our commerce from the entire chain of waters. Such a fleet would have it in its power to inflict a loss to be reckoned only by hundreds of millions of dollars, so vast is the wealth thus exposed to the depredations of a maritime enemy."

The cost of all the improvements proposed in this connexion would be but a trifle, compared with the loss which could be inflicted by a single *raid* by these gunboats through the lakes. This condition of exposure must not be permitted to continue; and thus we are brought to the question of

WHAT ARE THE BEST MEANS FOR DEFENDING THE LAKES?

Two plans have been proposed: one, that of a chain of forts along the shore, defending the entrance of each lake and other strategic points, and fortifications for the security of each considerable town and city.

The other is the construction or enlargement of such canals as will enable our fleets of gunboats to pass from the ocean by the Mississippi and the Hudson to the lakes. The objections to the former are grave, and in the judgment of your memorialists, viewed in the light of the experience of the present, are decisive.

The expense would be enormous, and when constructed, as against iron-clad gunboats, would prove unavailing. The war in which our country is now engaged has shown, especially have the siege of Charleston and the comparative vulnerability of Forts Wagner and Sumter demonstrated, that earthworks are better than regular walled forts, and that neither are adequate to prevent the passage of iron-clad gunboats.

We must, if practicable, do as Great Britain has done—construct military canals, adequate in capacity to admit our gunboats to the lakes. Thus we shall be placed upon an equality with our neighbors.

Fortunately, this is entirely practicable, and with but small expense as compared with the important results to be secured.

Various plans for constructing and enlarging canals, to enable gunboats to pass from the Hudson and the Mississippi to the lakes, have been suggested.

Prominent among others, is that of enlarging the present Illinois and Michigan canal from Lake Michigan to Lake Joliet, a distance of only thirty-six miles, and the improvement of the Illinois and Desplaines rivers, so that all steamers and gunboats which navigate the Mississippi can pass directly into Lake Michigan at Chicago. Also, a ship canal around the Falls of Niagara, and the enlargement of the locks of the Erie and Oswego canals, by which gunboats can pass directly from the Atlantic into Lakes Ontario and Erie.

We will not undertake to decide between the merits of these various propositions, nor whether it may not be expedient to enter upon the construction of all, or to extend aid to all; but we would most earnestly press upon the consideration of the President and of Congress the importance of securing, at the earliest practicable period, a steamboat and ship canal from the Mississippi to the lakes, and from the lakes to the Hudson and the Atlantic.

It was well said by Washington, "that if we desire peace, it must be known that we are at all times *ready for war.*"

The military position is, in a few words, this: On the American side, the northern frontier is defenceless. It is amply defended on the British side. England can take her gunboats from the ocean through the canals and the St. Lawrence into the lakes with facility. We cannot do it at all. Great Britain has constructed canals for this express purpose. We have no such military canals. England, years ago, did that for the defence of Canada, which our government is now asked to do for our own country. Without the ship and steamboat canals, our lake commerce and cities are at her mercy. With the enlarged canals, through our great superiority in mariners, steamers, vessels, and material on the lakes, we are secure, and our supremacy is certain.

Our security will be found in providing the means of floating "*Uncle Sam's webbed feet,*" as the President calls our gunboats, into the lakes. The work done by these "web-footed gunboats" in this war, "not only on the deep sea, the broad bay, and the rapid river, but also up the narrow bayou and wherever the ground was '*a little damp,*'" has furnished most valuable illustrations of their importance in all military operations.

Surely our government will not do less in providing military canals for the security of the very heart and life of the nation, the homes of ten millions of people, than Great Britain has done for a remote colony and a dependency, which she seems sometimes not very reluctant to have detached as an incumbrance.

Great Britain has constructed the Canadian canals to secure distant and sparsely settled provinces, whose commerce is small compared with our, and upon which, therefore, the injury we could inflict, in case of war, would be trifling as compared with that to which our lake towns and commerce would be exposed, in case England should obtain supremacy on the lakes.

The above are some of the reasons why we most fully concur in the resolution unanimously adopted by the convention by which we were appointed, "that canals, with dimensions sufficient to pass gunboats from the Mississippi to Lake Michigan, and from the Atlantic to and from the great lakes, *will furnish the cheapest and most efficient means of protecting the northern frontier.*"

2. *Commercial importance of the ship canals.*

Your memorialists, having presented their views of the military importance of these canals, ask attention to some considerations showing that they have become a *commercial necessity.*

The configuration of the North American continent presents the most remarkable adaptation to internal commerce of any portion of the globe.

The great interior basin drained by the Mississippi and its tributaries, with ten thousand miles of steamboat navigation; the lakes, with their shore lines of five thousand miles, and with more than ninety thousand square miles of surface—these great Mediterranean seas of the New World can be connected with the great river of the west by a steamboat and ship canal only thirty-six miles long!

The commerce of these lakes, carried in fleets composed of sixteen hundred and forty-three vessels and steamers, reaches in value between four and five hundred millions of dollars per annum. The commerce of the Mississippi and its great tributaries, before the rebellion, it is believed, was not less in value, A direct union between these waters will be like the union of two oceans. The Suez canal does not compare in importance with a ship canal from the Mississippi to the lakes. No day should delay its accomplishment.

The outlet to the Atlantic by the east is equally remarkable with that of the south, and equally favorable to the commercial development and unity of our country. The arm of Almighty God cut down the barriers of the Alleghanies, and ordained that the ocean tides should flow through the highland passes of these mountains. The broad Hudson, stretching away northerly towards the lakes, pointed to the sagacious statesmen of New York the pathway to empire. The genius of De Witt Clinton, quick to catch the clear intimation, comsummated what nature had so nearly completed, and opened the way by the New York canals from the Atlantic to the lakes. Illinois, by the aid of the federal government, followed, completing the water channel from the Atlantic to the Mississippi; and now we have only to follow the finger of God, as interpreted by Clinton, and consummate what is so nearly done, and we have an east and west Mississippi from the Missouri to the Atlantic.

WE HAVE OUTGROWN OUR CANALS.

The great commercial fact of to-day, felt and realized, is, that we have outgrown our canals. The country is too big for them. The problem is, shall production stop its increase, or shall our canals be enlarged? The necessity of this enlargment is manifest by the enormous profits of the great railways, and the extravagant rates of transportation, showing that the quantity to be carried forward is so vast that carriers command their own terms. The warehouses and mammoth elevators of the lake towns for the last two years have been crushed with freight; everything which could be made to float on the lakes and canals has been taxed to the utmost, and proved insufficient to carry to market the products of the west. This necessity for greater facilities, and the failure in Congress of the bills for enlarging the New York and Illinois canals, have led to a zealous effort on the part of the west to obtain, by Canadian canals, that relief which is (we trust only temporarily) denied through our own country and by our own government. Illinois and Wisconsin, through their State authorities, and the boards of trade of several lake cities, appointed delegates to Canada to obtain, if possible, avenues to market for the vast accumulation of western produce.

Necessity will force the west into new avenues to the Atlantic, unless the present are enlarged. That both Canada and Great Britain appreciate the value of this western trade is shown by their construction, for the purpose of securing it, of the Victoria bridge at Montreal, at a cost of seven millions of dollars, and the Grand Trunk railway at a cost of about sixty millions of dollars, in addition to the canals before referred to.

It is obvious, from these and other facts, that we have reached that point when, with our present means of transportation, the production of corn and other cereals cannot to any great extent be profitably increased. This condition should not surprise us. The canals were constructed while the west was in embryo. In 1837 the number of tons transported from west of Buffalo, on the Erie canal, was 56,255. In 1861 the number reached 2,156,426.

The product of wheat and corn carried on the New York canal from the lake States of Ohio, Michigan, Illinois, Indiana and Wisconsin, in 1850, was 252,000,000 bushels; in 1860, 354,000,000 bushels.

The population of these States, and Iowa, Kansas, Minnesota, Missouri and Nebraska, in 1850, was 5,403,595; in 1860 it was 9,092,009.

The value of western products has increased more than 100 per cent. in the last four years. In 1859 it was, in round numbers, $53,000,000, and in 1862, $111,000,000. Our foreign exports are made up largely of breadstuffs and provisions. In four years they increased from $38,305,991 in 1859, to $122,650,043 27 in 1862, increasing in two years 180 per cent., and in three years 220 per cent. The amount of $122,650,043 for 1862 is exclusive of $11,100,043 which went out through Canada, making the aggregate over $133,750,000.

The following tables, compiled from the preliminary reports of the census for 1860, will show the progress of the west, and will furnish data by which its present and future necessities may be more fully realized.

Population of the northwestern States in 1850 *and* 1860.

States.	1850.	1860.	Ratio of increase.
Illinois	851,470	1,711,951	101.05
Indiana	988,416	1,350,428	36.63
Iowa	192,214	674,913	251.12
Kansas	....	107,206	....
Michigan	397,654	749,113	88.38
Minnesota	6,077	172,123	2,732.36
Missouri	682,044	1,182,012	73.30
Ohio	1,980,329	2,339,511	18.13
Wisconsin	305,391	775,881	154.06
Total	5,403,595	9,063,138	....
Nebraska	....	28,841	....
Grand total	5,403,595	9,091,970	68.25

Value of real and personal property in the northwestern States in 1850 *and* 1860.

States.	1850.	1860.	Ratio of increase.
Illinois	$156,265,006	$871,860,282	457.93
Indiana	202,650,264	528,835,371	160.95
Iowa	23,714,638	247,338,265	942.97
Kansas	....	31,327,895	....
Michigan	59,787,255	257,163,983	330.13
Minnesota	....	52,294,413	....
Missouri	137,247,707	501,214,398	265.18
Ohio	504,726,120	1,193,898,422	136.54
Wisconsin	42,056,595	273,671,668	550.72
Total	1,126,447,585	3,957,604,697	....
Nebraska	....	9,131,056	....
Grand total	1,126,447,585	3,966,735,753	243.23

NOTE.—In the official reports at hand no separation is made of the respective amounts of real estate and personal property in 1850.

Number of acres and value of improved lands, and ratio to total area, in the northwestern States, in 1850 *and* 1860.

States.	Total area.	Improved lands, 1850.		Ratio of improved lands to total area.	Improved lands, 1860.		Ratio of improved lands to total area.
		No. of acres.	Value.		No. of acres.	Value.	
	Acres.						
Illinois	35,459,200	5,039,545	$96,133,290	14.21	13,251,473	$432,531,072	37.51
Indiana	21,687,760	5,046,543	136,385,173	23.26	8,161,717	344,902,776	37.71
Iowa	32,584,960	824,682	16,657,567	2.53	3,780,253	118,741,405	11.60
Kansas	73,470,720	....	....	....	372,835	11,394,184	0.50
Michigan	35,995,520	1,929,110	51,872,446	5.35	3,419,861	163,279,087	9.77
Minnesota	106,256,000	5,035	161,948	0.04	554,397	19,070,737	0.52
Missouri	43,123,200	2,938,425	63,225,543	6.81	6,246,871	230,632,126	1.44
Ohio	25,576,960	9,851,493	358,758,603	38,51	12,665,587	666,564,171	49.51
Wisconsin	34,511,360	1,045,499	28,528,563	3.02	3,746,036	131,117,082	10.85
Total	408,615,580	26,680,332	751,723,133	6.52	52,199,030	2,118,232,640	12.27
Nebraska	214,964,480	....	....	....	122,582	3,916,002	0.05
Grand total	623,580,060	26,680,332	751,723,133	4.27	52,321,612	2,122,148,642	8.13

Quantity of wheat and Indian corn in the northwestern States in 1850 *and* 1860

States.	Wheat.		Indian corn.	
	1850.	1860.	1850.	1860.
	Bushels.	*Bushels.*	*Bushels.*	*Bushels.*
Illinois	9,414,575	24,159,500	57,646,984	115,296,779
Indiana	6,214,458	15,219,120	52,964,363	69,641,591
Iowa	1,530,581	8,433,205	8,656,799	41,116,994
Kansas	....	168,527	....	5,678,834
Michigan	4,925,889	8,313,185	5,641,420	12,152,110
Minnesota	1,401	2,195,812	16,725	2,987,570
Missouri	2,981,652	4,227,586	36,214,537	72,892,157
Ohio	14,487,351	14,532,570	59,078,695	70,637,140
Wisconsin	4,286,131	15,812,625	1,988,979	7,565,290
Total	43,842,038	93,062,130	222,208,502	397,968,465
Nebraska	....	72,268	....	1,846,785
Grand total	43,842,038	93,134,398	222,208,502	399,815,240

Number of miles of railroad in operation in the northwestern States in 1850 *and* 1860.

States.	1850.	1860.
Illinois	110.50	2,867.90
Indiana	228.00	2,125.90
Iowa	....	679.67
Kansas	....	....
Michigan	342.00	799.30
Minnesota	....	....
Missouri	....	817.45
Ohio	575.27	2,900.75
Wisconsin	20.00	922.61
Total	1,275.77	11,113.58

With the canals enlarged as proposed, production may be stimulated a hundred fold, and yet still yield a fair profit to the producer. These enlarged canals, reducing materially the cost of transportation, will enable us to compete successfully in, and perhaps control the foreign market for, breadstuffs and provisions. Every acre of land west of the lakes to the Rocky mountains, and from Cairo and even Memphis north to and including Minnesota, will be brought practically hundreds of miles nearer market, and of course every acre of land throughout this vast area will be increased in value.

This will stimulate emigration, settlement and production, and secure the early cultivation of the fertile lands of the Mississippi valley, and secure to our agriculturists the markets of the world. With these canals, the western farmer can compete successfully with the grain-producing countries of the Old world, and drive them from the field of competition.

It should be remembered that the increased production of food in Europe is limited by physical difficulties. The country is old, thickly peopled, and the good land is all improved. Mountains, barren wastes, and irreclaimable marshes, offer obstacles to any great increase in the production of food.

With us it is otherwise. We have a soil of inexhaustible fertility, a large portion of it as yet unbroken. There is spread out between the lakes and the base of the Rocky mountains millions and millions of acres of the richest land on earth. This soil has a peculiarity of great significance. It is so admirably adapted to the use of labor-saving machinery, that although the northwest has sent not less than half a million of her most efficient laborers to the camp as volunteers, their absence has been so successfully supplied by labor-saving machines that the quantity of land cultivated has not been lessened, nor the crops materially diminished. God has so fashioned this land that with small labor it will yield the most bountiful return in endless crops of food. He has fitted it to be the garden and granary of the world, richer even than the valley of the Nile. He causes the sun to shine and the rain to fall upon this land, and clothes it with a rank and luxurious vegetation which annually decays where it grows, or feeds the prairie fires which sweep over it in autumn. We have the land, the laborer is ready, but without these enlarged canals the labor will not be remunerative, and the land will not be cultivated.

Corn, for want of adequate means of transportation, is, on the western prairies, annually consumed for fuel. This does not pay. Shall Europe starve for bread, and our rich prairies remain uncultivated for want of these canals to carry the products to market? Let Congress answer by its action on these great questions now presented.

By reference to the reports of the boards of trade and mercantile associations submitted to the convention, and which we believe to be entirely reliable, it appears that the enlarged canals would reduce the cost of transportation between Chicago and New York at least ten cents, and between the Mississippi and the Atlantic at least fifteen cents a bushel. Divide this saving between the western producer and the eastern consumer, and while you raise the price of every bushel of wheat and corn to the farmer, you reduce the price of every loaf of bread in every house in New England and the seaboard cities. The crop of 1862 shipped to the east through the canals alone exceeded one hundred millions of bushels! When we remember that the west pays annually more than fifty millions of dollars for transporting its produce to market, it is obvious that there would be saved on the transportation of a single crop more than the entire cost of these improvements.

But it is not the trade of the Mississippi valley only, vast as it now is, and almost incalculable in its future, that will require these enlarged canals. All this will at no distant day be augmented by contributions from the auriferous regions of the Rocky mountains, the valley of the Columbia, and the Pacific coast. The mineral wealth of this region, being rapidly developed, is not yet appreciated. The copper and iron of Lake Superior, the lead of Illinois and Wisconsin, the inexhaustible coal-fields of the great interior basin, and the silver and gold of the Rocky mountains, added to the agricultural wealth of the great interior, make it among the most favored portions of the globe. To develop these advantages requires the immediate construction of these canals.

THE WORDS OF BENTON.

The great statesman of Missouri, Thomas H. Benton, a man whose vast information and ideas were worthy of the Mississippi valley, in 1847 addressed the river and harbor convention in words worthy of being recalled to the attention of the American people to-day.

He says:

"The lake and river navigation of the great west, to promote which your convention is called, very early had a share of my attention, and I never had a doubt of the constitutionality or expediency of bringing that navigation within the circle of internal improvements by the federal government, when the object of the improvement should be of general and national importance.

"The junction of the two great systems of waters which occupy so much of our country, the northern lakes on the one hand, and the Mississippi river and its tributaries on the other, appeared to me to be an object of that character, and *Chicago the proper point for effecting the union*, and near thirty years ago I wrote and published articles in a St. Louis paper in favor of that object, indicated and almost accomplished by nature herself, and wanting from man little to complete it. These were probably the first formal communications upon authentic data in favor of the Chicago canal.

"The nationality of the Chicago canal and the harbor at its mouth are by no means new conceptions with me.

"The river navigation of the great west is the most wonderful on the globe, and, since the application of steam power to the propulsion of vessels, possesses the essential qualities of open navigation. Speed, distance, cheapness, magnitude of cargoes, are all there, and without the perils of the sea from storms and enemies. The steamboat is the ship of the river, and finds in the Mississippi and its tributaries the amplest theatre for the diffusion and the display of its power. Wonderful river! Connected with seas by the head and by the mouth, stretching its arms towards the Atlantic and the Pacific—lying in a valley which is a valley from the Gulf of Mexico to Hudson's bay—drawing its first waters not from rugged mountains, but from the plateau of the lakes in the centre of the continent, and in communication with the sources of the St. Lawrence and the streams which take their course north to Hudson's bay—draining the largest extent of richest land, collecting the products of every clime, even the frigid, to bear the whole to market in the sunny south, and there to meet the products of the entire world. Such is the Mississippi. And who can calculate the aggregate of its advantages, and the magnitude of its future commercial results?"

Hear Silas Wright, as worthy to speak for the east as Benton for the west:

"I am aware that questions of constitutional power have been raised in reference to appropriations of money by Congress for the improvement of lake harbors, and I am well convinced that honest men have sincerely entertained strong scruples upon this point; but all my observations and experience have induced me to believe that these scruples, where the individual admits the power to improve the Atlantic harbors, arises from the want of an acquaintance with the lakes and the commerce upon them, and an inability to believe the facts in relation to that commerce when truly stated. It is not easy for one familiar with the lakes and the lake commerce to realize the degree of incredulity as to the magnitude and importance of both, which is found in the minds of honest and well-informed men residing in remote portions of the Union, and having no personal acquaintance with either; while I do not recollect an instance of a member of Congress, who has travelled the lakes and observed the commerce upon them within the last ten years, requiring any further evidence or argument to induce him to admit the constitutional power, and the propriety of appropriations for the lake harbors, as much as for those of the Atlantic coast. I have long been of the opinion, therefore, that to impress the minds of the people of all portions of the Union with a realizing sense of the facts as they are in relation to these inland seas, and their already vast and increasing commerce, would be all that is required to secure such appropriations as the state of the national treasury will from time to time permit for the improvement of the lake harbors."

But the scruples which Benton and Wright sought to remove disappear in the light of the census returns showing the national, not to say continental, character of the commerce to be relieved; and now that the action of Great Britain has given to these improvements the character of necessary, defensive military works, these scruples disappear, and are no longer entitled to serious consideration. It is not too much to say that to the magnificent enterprise of the Erie canal the northwest owes its existence. This great section would have been as yet in its feeble infancy but for the enterprise of Clinton and the genius of Fulton.

The enlargement of the canals between the Mississippi and the Atlantic would create a new era, from which would date another career of advance and progress equally rapid and important. The wave of emigration, checked by the war, is already returning, and will soon be upon us with increased volume.

The expenditures asked for by the contemplated improvements are light indeed. So much has already been done by nature and by the States through which the improvements are to pass, that the cost of the completion of the ship canal will be small compared with the results. We believe the Illinois canal can be constructed in the manner proposed by the legislature of Illinois to the last Congress, without costing the national treasury a single dollar; that its tolls would soon pay interest and principal upon its cost, and thus this great national work, free at all times for the military purposes of the government, would soon, having paid its cost, become free to the vast and constantly increasing commerce of the lakes and the Mississippi.

These enlarged communications between the Mississippi and the lakes and the Atlantic would save every year, in lessening the amount paid for transportation, more than their cost. There is not an acre of land between Lakes Michigan and Superior and the western barrier of the Rocky mountains, and including the valley of the Mississippi to New Orleans, but would be increased in value, and the aggregate of such increase would bear no proportion to the amount required to complete the works.

There is not a bushel of wheat or corn, nor a barrel of pork or of beef, nor of any article of food in this whole area, but would be enhanced in value. The year these works should be completed they would add to the taxable property of the nation an amount the taxes upon which in a single year would pay off their cost.

Such we believe, without exaggeration, are some of the advantages commercially and economically to result from these improvements.

We have referred to the commerce and trade of the lakes and the Mississippi combined as vastly greater than our foreign commerce, and as supplying the bulk of our foreign exports. This is the west of to-day, with less than one-twentieth part of its available land improved. Stimulate industry, invite emigration and improvement by these canals, and who can estimate its future? What figures or language shall describe its greatness?

To render complete this great national work it will be necessary to clear the rapids of the Mississippi river at two points, namely, above Keokuk and above Rock island; this is an improvement long demanded by every State bordering on the great river, and of such acknowledged importance as already to have been partially accomplished by the federal government.

This will perfect the water communication both between the extreme northern States and the south, and the same States and the east; the first by the river alone, the latter by river, canals, and lakes combined.

The outlay required for the removal of obstructions at these two points, to make good the navigation, is inconsiderable, and the advantage most important in a military as well as a commercial point of view.

3. *National unity will be forever secured by these canals.*

No reflecting mind who has marked the events of the last two years but will admit that among the influences that have made separation and disunion impossible was the Mississippi river. The great river of the west has been strong enough to hold the Union together. Never in the darkest, gloomiest hour of the rebellion has the west considered it a debatable question that she could ever, under any circumstances, consent to separation. Her gallant soldiers have marched right on from Cairo to the Gulf, like the current of her great river, resistless, overcoming every difficulty, triumphing over every obstacle, until no rebel flag now floats upon her waters. She was deaf to the overtures of the traitors, who sought by alluring promises of commercial advantages to seduce the northwest from her fealty to the nation. The west means to maintain the unity and integrity of the whole country. With one hand she grasps the south, and with the other she clasps the east, and she will never consent to reach the ocean in either direction through foreign territory.

But it must have occurred to every thoughtful mind how the ties which bind us together would be strengthened and multiplied by these ship canals creating another Mississippi from St. Louis, and Kansas, and St. Paul, to New York and Boston It has been well said that the myriad-fibered cordage of commercial relations, slight in any individual instance, but indissoluble in their multitudinous combination, produces such unity of purpose, unity of interest, intelligence, sentiment, and national pride, and social feeling, and that homogeneousness of population which unites peoples and maintains nationalities. Such will grow up with a power which no sectional feeling can break between the east and west when connected together by these canals.

It is a curious fact in our history that the same man who was the father of nullification, the author of the secession heresy—the man who planted the seeds of this bloody rebellion, and nurtured them while he lived—in his earlier and better days was a truly national statesman, with an enlightened patriotism which embraced the whole country.

In 1824 John C. Calhoun, then Secretary of War, in advocating the construction of roads and canals by the national government, said: "Let us bind the republic together; let us conquer space by a perfect system of roads and canals."

It was said by Montesquieu that a republic could not exist and govern a large territory. There was some truth in the remark when he made it, and it has in it still enough of reason, in spite of steam, railways, and telegraphs, and other agencies that annihilate distance, to make it wise for our statesmen to bind our different sections together by every means in their power. The rebellion has demonstrated the necessity of a closer union and a more consolidated nationality. No agency will be more effective in securing these than these great ship canals.

The nation has expended its millions of treasure without regard to the amount, and its blood has been poured out like water to open the Mississippi, and yet no one has been found to declare that the cost has been too great for the object. Such is the profound conviction that we *must* maintain the integrity of the Union and a free passage to the Gulf and the sea. The eastern pathway to the ocean by these enlarged canals would be still more important, and would serve still more strongly to bind the Union together. And yet this can all be secured by a sum less than a month's military expenditure in the valley of the Mississippi, and without one drop of precious blood.

If the map of the territory which is to be connected by these canals, extending from the west to the shores of the Atlantic, were laid over the map of Europe, that portion of the globe which for the last thousand years has engrossed the attention of the civilized world would be entirely covered. It would overspread monarchies, empires, and nationalities, which for ages have been antagonistic, belligerent—the great battle-fields of Europe. It would cover the theatre of the great wars which have desolated and depopulated again and again that continent from France and Waterloo to Sebastopol. Human beings by the million have been sacrificed in the wars of the Fredericks, of the Louises, of the Phillips, and the Charleses; of the Marlboroughs, and of the Bonapartes. Millions and millions of treasure, wrung from the toil of the laboring masses, have been expended in fortifying frontiers and the operation of these wars. Rivers of blood have flowed, so that you cannot take a day's ride in Europe without passing over fields memorable for human slaughter. Shall these scenes of butchery and desolation be re-enacted in our own beloved country? Shall this fair country, lately so peaceful, prosperous, and happy, break into fragments? Shall the Hudson, the Susquehanna, the Delaware, and the Ohio bristle with fortifications? Shall the Atlantic States contend in battle with the generous west? Shall we ever re-enact upon these fair prairies and broad lakes the bloody pages of European history? Shall fratricidal wars, with all their horrors, their merciless expenditures of blood and treasure, darken the future pages of American history?

God forbid. Could some divine agency, a thousand years ago, have made of Europe a great confederate nationality, levelling its dividing mountains, and mingling its clans into one great homogeneous people, and made it free, virtuous, and wise enough to be united, what untold misery and suffering would have been prevented.

No levelling of dividing mountains is here necessary. *God* in his goodness has fashioned our country, vast as it is, for unity. He has given us one language, the same laws, and one glorious flag. He has made one great nationality a necessity. He has blessed us with liberty. Let us second God's plans, and aid and strengthen by every generous means the influences which shall hold us together forever.

What are a few millions expended, if the tendency is to strengthen the bonds of our Union?

Could the present horrid rebellion have been prevented at any cost of money or treasure, how wise, how economical, how beneficent the expenditure!

Let no narrow jealousies, let no sectional prejudices delay these great improvements so important to the general welfare, so necessary to our security, so favorable to our commercial development, so just to the western producer, so beneficial to the eastern consumer, so essential to the growth of the west, but, above all, so indispensably useful in binding our wide territory in one perpetual Union.

It seems to your memorialists that no one can study the outlines of our country without becoming satisfied that the works contemplated are not only necessary, but *inevitable.* Such vast advantages at such small cost will not be neglected by a people so sagacious and enterprising as those represented by the American Congress.

Let us, then, crown the mighty military struggle in which we are engaged and which now seems to be approaching a triumphant close—let us crown it by one of those signal triumphs of peace which, not less than the victories of war, shall exhibit our devotion to the Union, and our determination that by its multiplied blessings we will make it perpetual.

Then, looking down the future, may we contemplate an ocean-bound republic, a glorious band of an unbroken brotherhood of States, with its hundreds of millions of people, speaking the same language, living under the same laws, worshipping the same God, and over all floating the same flag, consecrated forever to Liberty and Union.

ISAAC N. ARNOLD, *Illinois.*
A. A. LOW, *New York*
P. CHAMBERLIN, *Ohio.*
JAMES A. McDOUGALL, *California.*
EZRA NYE, *New Jersey.*
JUSTIN S. MORRILL, *Vermont.*
HENRY L. DAWES, *Massachusetts.*
GEORGE W. JULIAN, *Indiana.*
THOMAS M. EDWARDS, *New Hampshire.*
RUSSELL BLAKELEY, *Minnesota.*
D. R. ANTHONY, *Kansas.*
T. C. HERCEY, *Maine.*
M. M. DAVIS, *Wisconsin.*
SAMUEL L. CASEY, *Kentucky.*
P. J. HOMER, *Missouri.*
R. B. HILL, *Iowa.*

REPORT

OF

BENJAMIN P. JOHNSON,

COMMISSIONER OF THE UNITED STATES,

ON

The International Exhibition held in London, in 1862.

To the President of the United States:

Having been appointed by your excellency as one of the commissioners to make preparations for the international exhibition to be held in London in 1862, and having, as chairman of the executive committee, superintended the selection of articles entered for exhibition from the United States, and having attended the exhibition on the part of the United States, to aid the exhibitors who had presented their articles which had been approved, I have deemed it proper to report to your excellency the results of the exhibition, especially as regards the contributions from this country.

Although the number of our exhibitors was much less than they would have been had an appropriation been made to cover the expenses, still the result of the exhibition, and the success of those who presented their contributions, was of so marked a character as to be worthy of preservation, and I trust it may be found that much good has been accomplished by our being represented as a nation in that most interesting and important exhibition.

I have the honor to be, most respectfully, your obedient servant,

B. P. JOHNSON.

ALBANY, N. Y., *February,* 1863.

INTRODUCTION.

The subscriber had not made special preparation for a report on the international exhibition of 1862. On his arrival home, it was suggested that a report was desirable, showing generally the character of the exhibition as compared with that of 1851, and a description of the articles from our country which had found favor in this unequalled exhibition. Severe domestic affliction limited the time which could be devoted to this work, and I have not been able to prepare it as I desired. I trust this will be a sufficient apology for the imperfection of the work.

While in attendance at the exhibition, as much time as possible was devoted to a personal examination of the exhibition itself, and yet every day, until the last, developed some new beauty, or revealed some priceless work of taste and of art which had before been unnoticed. The contributions of twenty-five thousand exhibitors required all the time of the whole exhibition to give a minute description of these contributions. I have availed myself of the labors of others, whose examinations were valuable, which has enabled me to give a fuller account than from my own examinations alone.

To Mr. Joseph E. Holmes, the assistant commissioner, who was present at the opening of the exhibition, and who secured the introduction into the exhibition of our articles, and who arranged and managed our department under the most serious obstacles, and finally secured our triumphs, I am greatly indebted, and his compilation and description of our articles have been of the greatest advantage.

The reports of the jurors and distinguished scientific men which I have been able to secure have been of the greatest importance. Many of these reports are given; and the comments of the leading journals as to the great value of our contributions will enable our people to form some faint idea of the largest and most perfect exhibition which has ever been brought before the nations of the world, where, in the language of his royal highness the late Prince Albert, nations would come to remedy the *deficiencies apparent* in each in the exhibition of 1851. And it is a matter of wonder that such improvements have been made, in the various countries there represented, in eleven years.

Although the United States had but a very limited representation there, it is a subject of just congratulation that our exhibitors received a larger proportion of prizes compared with the number of exhibitors, as shown by the reports, than any other country. These men are certainly entitled to the gratitude of their country for having, at their own charge, presented themselves at this great exhibition and entered the lists with the nations of the world, and come off triumphant.

Having been solicited by many of the exhibitors from this country to attend as the representative of our country, I was present, and accepted by her Majesty's commissioners as such representative, and did what I could to sustain the standing we secured in 1851, and I trust a careful perusal of this very imperfect report will satisfy every unprejudiced mind that our appearing in the exhibition has been the means of showing to the world the resources of our country, and the importance of our free institutions in developing the talents and capabilities of our citizens, as could not have been done in any other manner.

To her Majesty's commissioners we are greatly indebted for the attention which was extended to us. Every facility was given to our exhibitors, and we were treated with the same attention that was extended to other nations much more extensively represented. We shall ever remember with gratitude the many favors received.

B. P. JOHNSON.

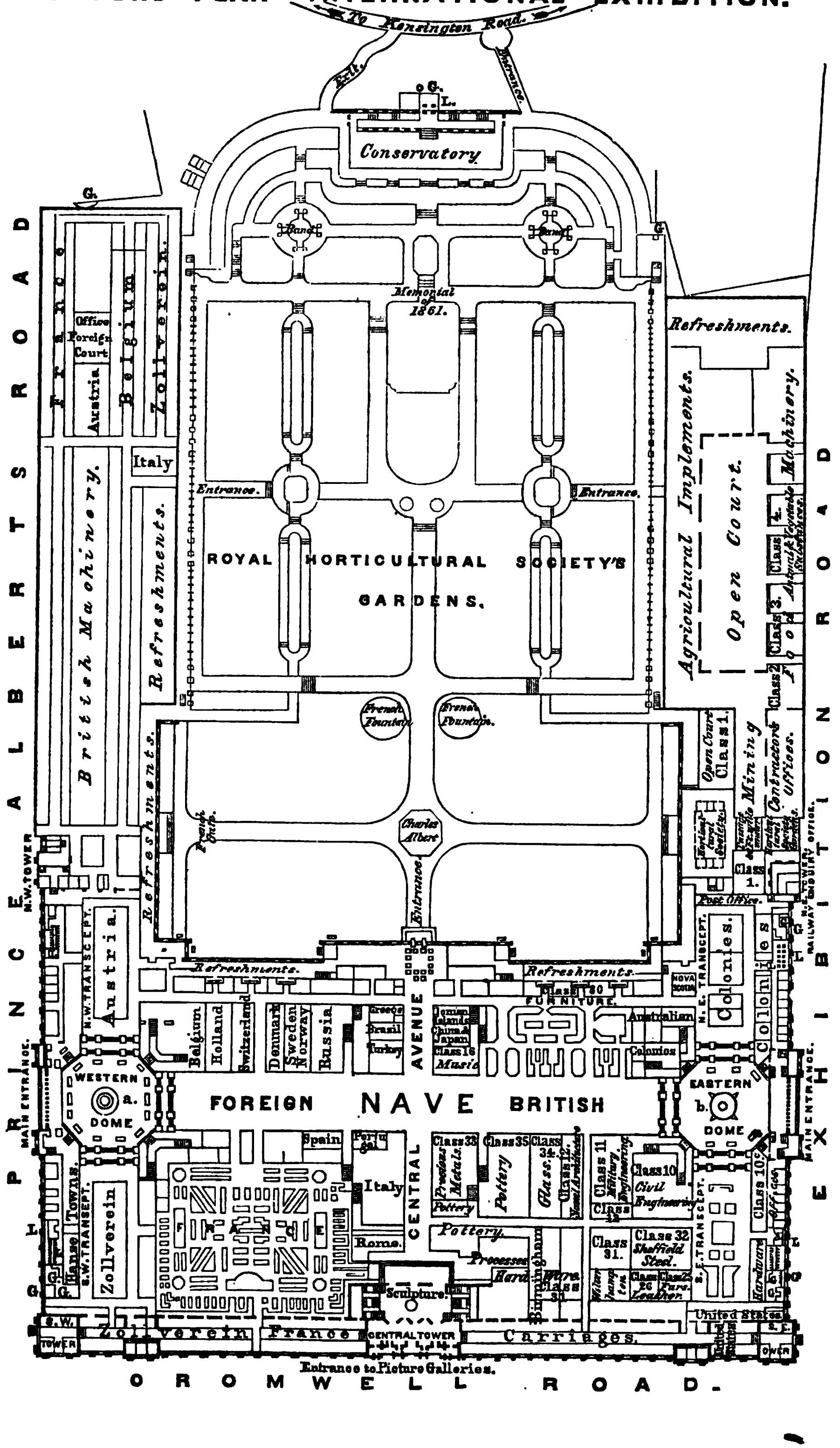
ALBANY, *February*, 1863.

LONDON INTERNATIONAL EXHIBITION OF WORKS OF INDUSTRY AND ART, 1862.

Letter from her Majesty's commissioners—the Earl Granville, K. G., chairman; the Duke of Buckingham and Chandos; Sir C. Wentworth Dilke, baronet; Thomas Baring, esq., M. P.; Thomas Fairbairn, esq.; F. R. Sandford, secretary—to the commissioner for the United States.

DEAR SIR: Although the concluding ceremony of the international exhibition will not, as you have already been informed, take place till the month of January next, I cannot allow the day on which the building is virtually closed to the public to pass away without congratulating you in my own name, and on

GROUND PLAN OF INTERNATIONAL EXHIBITION.



behalf of my colleagues, on the results that have attended the labors of your commission, to the several members of which we beg to offer our cordial thanks for the invaluable assistance which they have rendered to us in carrying this great undertaking to a successful issue.

We have received in the first instance, with much satisfaction, the announcement of your nomination by your government to represent the interests of your country, and now, at the close of the exhibition, we cannot express too warmly our gratitude for the manner in which, while legally maintaining these interests, your commission has supported us in our endeavors to promote the general efficiency and success of the exhibition.

We have moreover much pleasure in thinking, that in no single instance, from the time when we first entered into communication with you, has any misunderstanding arisen to interrupt the general harmony that has prevailed throughout the exhibition.

While we feel that we are much indebted for this happy result to the cordial co-operation of yourself and your colleagues, we are also sensible that no small share of thanks is due to the executive and officers of your commission, to whom we would therefore request you to tender our warmest acknowledgments.

We have also to request that you will have the goodness to communicate the substance of this letter to the various members of your commission, and to your government; and begging you to accept personally an expression of our very high esteem,

I am, my dear sir, yours very faithfully,

GRANVILLE.

ALBANY, U. S., *November* 20, 1862.

DEAR SIR: I am favored with your letter to the commissioner of the United States at the closing of the building, and I cannot let this opportunity pass without expressing my most grateful thanks to her Majesty's commissioners for the very kind expressions of approbation of the United States department, and its management during the exhibition.

We are under the deepest obligations to her Majesty's commissioners for the facilities extended to us, and it gives me great pleasure to assure you that everything desired by our department has been afforded us, and that in a manner the most gratifying. I beg leave to tender to yourself and to her Majesty's commissioners my personal acknowledgments, which I desire you, on my behalf, to present to your associates.

With the highest regards, I am, my dear sir, faithfully yours,

B. P. JOHNSON,
United States Commissioner.

EARL GRANVILLE, K. G.,
Chairman of Her Majesty's Commissioners.

INTERNATIONAL EXHIBITION, 1862.

Official directory.

Her Majesty's commissioners.—The Earl Granville, K. G., lord president of the council; the Duke of Buckingham and Chandos; Sir C. Wentworth Dilke, Bart; Thomas Baring, esq., M. P.; Thomas Fairbairn, esq.; F. R. Sandford, secretary and general manager; Dr. Lyon Playfair, C. B., F. R. S., special commissioner for jury department.

Offices of her Majesty's commissioners: Exhibition building, South Kensington, London, west.

Staff.—Assistant Secretary, Louis Lindon. Correspondence, C. W. Franks, Hon. Edwin B. Portman, Captain Herbert Sandford, R.B.A.; assistants, M. Kinsey, R. J. S. Smith. Superintendent of Illustrated Catalogue, Joseph Cundall; assistant, W. F. Westley. Superintendent of Official Catalogue, Sidney Whiting; assistant, J. McGauley. Board Clerk and Shorthand Writer, H. S. Kewley. Register, C. Martyn; assistants, H. J. Gibbs, E. Thompson, C. Nugent. Storekeeper, J. Lincoln. Post Office Clerk, W. H. Foster; assistant, T. W. Church. Clerks, C. H. G. Pease, C. R. Bigland, J. Evans. Office keeper, S. Millie.

Finance.—Principal Financial Officer, J. J. Mayo; assistants, D. C. Maunsell, S. J. Nicolle. Clerks, Percy Jackson, W. G. Lawrence.

Building.—Engineer and Architect, Captain Francis Fowke, R. E.; assistant, Captain Phillpotts, R. E. Superintendent of Decoration, J. G. Grace. Surveyor, H. F. Gritten.

Executive.—Superintendent of British division, A. N. Sherson. Superintendent of Foreign Department, P. C. Owen; assistants, Lieutenant Brooke, R.E., Lieutenant Harrison, R.E., J. W. Appell, F. Wakeford, G. R. Redgrave, A. S. Cole. General Superintendent for Arrangement, R. A. Thompson; assistants, J. C. Fox, W. E. Streatfield, H. Slater, W. H. Russell, William Raper Superintendent of Colonial Department, Dr. Lindley, F.R.S. Deputy superintendent, P. L. Simmonds, F. S. S. Superintendent of Indian Department, Dr. Forbes Watson. Superintendent of Fire Arrangements, Captain Bent. Superintendents of Classes: 1—R. Hunt, F. R. S.; assistant, E. V. Lindon. 2, 3, 4—C. W. Quinn, F. C. S.; assistant, F. E. Thomas; clerk, H. A. Kinloch. 5, 7, 8, 10—D. K. Clark; assistants, Nathaniel Grew, C. E., John Cundy, C.E., Robert Harwood, Edwin S. Rose; clerk, W. Green. 6, 31, 32, 36—T. A. Wright; assistants, J. Boult, F. A. Rainbow. 11, 12—Major Moffatt. 13, 25, 26—C. R. Weld; assistant, W. Hensman Jordan. 14—P. Le Neve Foster, M. A.; assistant, C. A. O. Baumgartner. 15, 28, 38A—J. Leighton, F. S. A.; assistant, R. Pigot. 16—C. Boosé. 17—J. R. Traer, F. R. C. S. 18, 19, 20, 21, 22, 23, 24, 27—G. Wallis; assistants, J. Taylor, E. J. Albo, J. Lidford. 29—J. G. Fitch, M. A.; assistant, C. A. O. Baumgartner. 30, 33, 34, 35, 37—J. B. Waring, F. R. I. B. A.; assistants, J. C. Gapper, G. A. Stewart. 39—Edmund Oldfield, M. A.

Jury department.—Secretary, J. F. Iselin. Clerk, J. O. Playfair.

Customs.—Surveyor General, F. S. John. Examining Officer, W G. Bramall; assistant, G. H. Scrivenor. Clerk and Assistant, F. Cockburn. Out-door Officers, A. Cobb, C. Buchanan, J. Atkinson. Messenger, W. Thomas.

Acting colonial commissioners.—Canada, Sir W. E. Logan, Brown Chamberlain, and J. B. Hurlbert. Vancouver, the Hon. A. J. Langley. British Columbia, Richard Charles Mayne, R. N. New Brunswick, Thomas Daniel. Nova Scotia, Andrew M. Uniacke. Prince Edward's Island, H. Haszard, 25 Old Basinghall street. Newfoundland, F. N. Gisborne. Bermuda, W. C. Fahie Tucker.

West Indian colonies, &c.—Bahamas, Samuel Harris. Barbados, Stephen Cave, M. P. British Guiana, Sir William H. Holmes and A. F. Ridgway. Jamaica, Edward Chitty, Lucas Barret, and Alexander F. Ridgway. St. Vincent, George C. Stacpoole, M.D. Trinidad, Sir W. H. Holmes.

African colonies and countries.—Natal, W. C. Sargeaunt. St. Helena, N. Solomon. Liberia, Gerard Ralston.

Australasian colonies.—New South Wales, Edward Hamilton, Sir Daniel Cooper, and Sedgwick Cowper. Queensland, Mr. H. Marsh, Alfred Denison, and Arthur Hodgson. Victoria, C. E. Bright. South Australia, Francis S.

Dutton. Western Australia, Alexander Andrews. Tasmania, Joseph Milligan, M. D. New Zealand, John Morrison.

Eastern colonies.—Ceylon, E. Rowdon Power. Mauritius, James Morris.

Acting foreign commissioners.—Belgium, O. Delepierre, secretary of legation and consul, 3 Howley Place, Maida Hill, and M. C. de Grelle, 28 St. Stephen's Square, Westbourne Park. Denmark, A. Westenholz, consul general, 26 Mark Lane. France, M. Le Play, Conseiller d'Etat, and M. Roguès, Hôtel de la Commission Impérial, Cromwell Road. Austria, Chevalier De Schwarz, 6 Onslow Crescent, Brompton. Prussia, Geheimer Ober Reigerungs-Rath Hoene, A. Altgelt, and C. Heidman, 10 Hereford Square, Brompton. Baden, Dr. Dietz, 40 Brompton Square, S. W. Bavaria, Dr. C. Beeg, 48 Brompton Square, S. W. Frankfort, P. F. Gouda, 58 Watland street, Cheapside, E. C. Hanover, Dr. C. Karmarsch, 9 Sussex Place, South Kensington, W., and G. W. Roese, 8 Trafalgar Square, Brompton. Saxony, Regierungs-Rath M. L. Wiessner, 13 Alfred Place, W. Wurtemberg, Dr. von Steinbeis, 53 Brompton Square, S. W. Hamburg, G. J. Göschen, 12 Austin Friars, E. C. Hanse Towns, A. L. J. Meier, 25 Gloucester Grove, Old Brompton, W. Greece, A. C. Ionides, consul general, 17 Gracechurch street, City. Ionian Islands, H. Drummond Wolff, C. M. G., London. Italy, H. Grabau, 44 Thurloe Square, and A. Gabrielli, 6 Queen's Gate Terrace. Netherlands, Baron van Brienen van Groetelindt and J. W. Campo, 3 Trevor Terrace, Knightsbridge. Norway, E. Tidemand, 7 South street, Thurloe Square. Sweden, C. F. Waern, 66 Sussex Lodge, Addison Road, South Kensington. Portugal, Le Viscount de Villa Maior, 91 Sloane street, S. W. Rome, H. Doyle, 17 Cambridge Terrace. Russia, Gabriel de Kamensky, 33 Victoria Road, Kensington Gore. Spain, G. Esteban Balleras, 23 Philpot Lane, E. C. Switzerland, G. Vogt and F. Fuchser, 1 Ovington Terrace, Brompton. Turkey, P. Gadban, 7 Lothbury. United States, Colonel B. P. Johnson and J. E. Holmes. Costa Rica, G. W. Ewen, 4 Adam Court, Old Broad street, E. C. Brazil, F. I. de Carvalho Moriera, Brazilian minister, and Agent W. H. Clark, 6 Leinster Terrace, Hyde Park. Peru, H. Kendall, consul, 11 New Broad street, E. C. Uruguay, G. Gilmour, vice-consul, Glasgow.

INTERNATIONAL EXHIBITION.

This exhibition owes its origin, as did that of 1851, to his royal highness Prince Albert and the Society of Arts. It was a matter of deep regret that this distinguished individual was not spared to witness the success of this exhibition, so creditable to those engaged in its inception.

I do not deem it necessary to review at length the occurrences which took place preparatory to our exhibitors leaving for the exhibition in London, in April, 1862.

The entries which had been made to the executive committee of the commissioners, of which I was chairman, were received from seventeen States and the District of Columbia; and had the articles been sent, as they would have been had an appropriation been made, they would have fairly represented the great industrial interests of our country, and would have shown as much progress since 1851 as was made by any country there represented.

Most of those who entered articles declined to send them to the exhibition; a portion, however, most of whose articles had been shipped pre vious to the action of Congress, through Mr. Joseph E. Holmes, of New York, the agent of the commissioners, who had been selected by these exhibitors as their agent. He went to London in time to be present at the opening of the exhibition. I gave to Mr. Holmes letters to the royal commissioners, desiring them to receive our articles and give them a place in the exhibition, and allow Mr. Holmes to take charge of the contributions from the United States. Mr. Holmes reached London in time to arrange the articles previous to the day of opening; and although the time for receiving articles had expired, her Majesty's commissioners consented to their being placed in the building, and every possible attention was given by the commissioners, and space was secured for all our articles. They were duly entered, and were brought before the jurors, and every facility given us which was extended to other countries. Mr. Holmes was recognized as assistant commissioner, representing the exhibitors from the United States, and myself as commissioner. The number of exhibitors whose articles were entered and passed upon by the jurors was ninety-five. Many others were subsequently received, and we obtained permission for their introduction into the exhibition building, and they had all the advantages resulting from the exhibition, except the examination by the jurors.

I arrived at London in the early part of June to take charge of the exhibition from this country, in connexion with Mr. Holmes, and was most cordially received by the commissioners as the representative of the interests of the United States in the great exhibition. It was gratifying to find that every facility had been afforded Mr. Holmes by the royal commissioners, and that he had fulfilled the duties devolving upon him satisfactorily to the commissioners, the exhibitors, and the public. Mr. Holmes is justly entitled to the credit of having carried out his arrangements most satisfactorily in the midst of obstacles that would have disheartened almost any other man. Without any funds to meet the expenses (except as contributed voluntarily from friends and exhibitors) which were required to prepare the space allotted our exhibitors, he succeeded in preparing one section of the building creditably to our nation and satisfactory to the royal commissioners. I trust, when the results of our exhibition shall be fully known, that Mr. Holmes, and others who contributed to our success, will not fail of receiving a proper remuneration.

THE BUILDING.

The building erected was of a substantial character, the walls of the main building being of brick, and though not as attractive as the Crystal Palace of 1851, was better calculated to display the articles to advantage. The site on which it was erected adjoins the Royal Horticultural Gardens, Kensington, and but a short distance from Hyde Park, and the site of the Crystal Palace of 1851.

Captain Fowke, of the royal engineers, was the designer of the present erections. This building was contrived with more regard to ulterior uses, and a departure from the structure of the first erection was necessary, and more permanent materials had been used in its construction.

Comparison of the erections in 1851 *and* 1862.—The exhibition of 1851 occupied, in all, nearly nineteen acres; that for 1862 covers a little over twenty-six acres. The flooring space in 1851 was 989,784 square feet; in the present building there are 1,140,000 square feet; but as the machinery and agricultural implements are exhibited in wings especially built for the purpose, the space at the disposal of the commissioners was practically 450,000 feet of flooring more than in 1851. The elevation and ground plan accompanies this report. The total length of the first exhibition building was 1,841 feet, by 450 feet wide. The present building is 1,152 feet long, by 642 feet broad, exclusive of the annexes. One half of the building, both on the floor and in the galleries, was devoted to the exhibition of the products of Great Britain and her colonies; and the other, the west, to the productions of foreign countries.

The annèxe for the machinery department was detached from the main building, and was 870 feet long by 200 feet wide; on the opposite side of this building is a shorter annèxe, devoted to agricultural implements and machinery not in motion, and miscellaneous objects of a less ornamental character than those which occupy the main body of the exhibition.

A writer remarks: "The international exhibition was an industrial one, such as the world has never before witnessed, and of which labor—working contentedly, at the loom or in the mine, unnoticed by the lilies of creation that neither toil nor spin—in its wildest moods has never dared to conceive. We have collected from every quarter of the globe the choicest gifts of nature, or the most finished productions of art. The 'frozen north' enters into rivalry with the 'sunny south;' the 'far west' challenges a comparison with the older and more experienced 'east.' Race there contends with race, for fertility in invention, or for delicacy of skill. Each country will see what it can do better than its neighbors; what its neighbors can do better than it; and will in consequence throw down the barriers which the past, with its prejudices and its hatreds, and its narrow rivalries, has been too ready to build up."

OPENING OF THE EXHIBITION.

The building was formally opened on the first day of May, by his royal highness the Duke of Cambridge, representing her Majesty, with suitable and very imposing ceremonies. The absence of her Majesty, and the death of his royal highness Prince Albert, cast a shadow over the whole assembly, which was apparent to all.

The exhibition thus formally opened was placed in charge of the jurors, who commenced their labors on the 7th of May, and completed the same early in July, and the awards were publicly declared in the building on the 11th of July. His royal highness the Duke of Cambridge, K. G., her Majesty's representative, received and distributed the awards to committees representing the exhibitors of the United Kingdom, and to the commissioners of the colonies and dependencies. The special representatives of foreign countries received and distributed the awards to the foreign commissioners. Those for the United States were received by the American minister, Mr. Adams.

PRESENTATION OF THE AWARDS.

We insert the description of this interesting ceremony abridged from the *London Times*, July 12:

The international exhibition.

Yesterday the exhibition bore its first fruits to anxious exhibitors in the public assignment of the jury medals and rewards. Nothing was spared by the executive to make this state ceremonial the pageant of the season. It was arranged and rearranged, international co-operation was invited, rules were laid down, which, for once, were not departed from, and, in fine, to make assurance doubly sure, even the chances of miserable weather were guarded against by a double programme for a fine or wet day being issued, either of which was to be adhered to as the occasion suited. The result of all these deeply-laid combinations and arrangements was, fortunately, success—a success so complete that there was almost a monotony in the punctual and undeviating regularity in which every event in the programme succeeded each other to the very second. When once the procession formed and started, people could tell by their watches where it was and what it was doing in any part of the building. Nor was it only a success of mere routine programme; it was equally successful in its enthusiasm, its pageantry, in the satisfaction it gave, and, though last, not least, in the weather which attended it. The latter has recently formed a topic of such universal conversation and regret that it would be unnecessary to refer to it here were it not a most note-worthy fact that it, for once, proved propitious to a display in which the horticultural gardens were connected or concerned.

The ceremonial of yesterday, we may state, was merely to assign the awards, not to deliver them; in fact, the medals themselves will not be ready till the exhibition draws near its closing days. It has been felt, however, that to defer the announcement of honors now to that comparatively distant period would be to deprive the exhibitors of more than half the advantages that ought to accrue from their successful competition. Much of whatever value attaches to the medals consists in exhibitors being able to announce their triumph while the exhibition is still a living fact. There is, we believe, to be yet another ceremonial, when the medals will be actually delivered in person to all the exhibitors that can attend on the occasion; but this, as we have said, will not be till near the end; and it is to enable them, in the mean time, to derive some practical benefit from their successful competition that the announcement of those entitled to be thus honored was made in state yesterday.

Though the attendance of visitors on this occasion was more than double that which crowded to the opening, yet, from some cause or other, the interest evinced in the proceedings bore no manner of relation to the eager curiosity with which every event of the 1st of May was watched. We don't at all attempt to account for this, though the fact itself, as rather a curious paradox, is worth stating. There was no long line of carriages blocking the way to the building as early as eight o'clock, nor at nine o'clock, nor even at ten o'clock, when the hour for opening came, nor was there anything like what could fairly be called a crowd about the doors. At all the doors, however, there were groups in waiting, for the caution which we ventured to give in these columns against overcrowding at the eastern entrance appeared to have had the desired effect, and visitors were equally distributed at all the doors, and passed in rapidly and without inconvenience. Short as had been the time allowed for preparation and arrangement, a good deal of change and of improvement also had been effected in the building. Stout barricades had been erected along almost the entire length of the very circuitous route which the procession had to traverse. In the nave the line was kept by rows of seats secured together, all of which in front were reserved for ladies. The stations where the awards were to be made were marked by small but very pretty trophies of flags and garlands, and some of those on the foreign side, especially that of France, were not only exceedingly beautiful, but costly as well. Round these stations were grouped some of the best and most appropriate objects which could be culled from the exhibition of the country to which the station belonged. All the marble columns, pedestals, and tables which could fairly be used for such a purpose were ornamented with fine fuchsias and flowering plants, so that the first glance down the nave, before visitors began to fill it, showed such a succession of beautiful and well arranged groups, such a mingling of form and color, all that was lovely and attractive in nature and art, as has never been so well displayed in the nave before. It was not long, however, before the throng of visitors restored to it much of its accustomed aspect—its rows of brilliant dressed ladies, its eager hurrying visitors, all seeking for places along the line of the procession, every one of which, of course, was occupied ten minutes after the opening of the building, though all the occupants knew perfectly well that they must sit out at least four hours before their long investment of time and patience would be rewarded. The time thus passed was by no means without attraction. There were bands in all parts of the building. It would, perhaps, be hypercritical to say that there were, if anything, rather too many, and that beyond a doubt some were placed too near each other for any to judge of the peculiar merits of each. It will meet the facts of the case to say that there were plenty of military bands, and no lack of music. It boomed from under the east dome, where the Life Guards were stationed, and the reverberations from their performance met those of the Coldstreams, near the Norwich gates, which again encountered the wild peculiar strains of the Egyptian band, sent by the Viceroy, and so on to the great Belgian band under the western dome. This entertainment was for those who wished to hear, and for those who wanted to see there was even more. The nave filled on each side, then the galleries, as the next point of vantage, began to be lined with crowds, and, as the seats here became more and more scarce, the salient angles along the trophies of the nave began to fill as well. Mr. Peters's drag and Chance's light-house were, of course, occupied; then Bell's obelisk, and then the stairways leading to the galleries; and, lastly, the roofs of the cases in the galleries found occupants, as did every other spot from which the ceremonial could be seen, with very many from which it could not be seen at all.

In the horticultural gardens the crowd along the route of the procession was very great. What were actually the numbers in both building and gardens it is difficult to guess. The official return gives no clue, as there was some misunderstanding, so that it was impossible to ascertain who came in by season tickets and who by payment. At some entrances the visitors were counted in, and at others, evidently, they were not counted at all. The returns up to one o'clock, when the ceremony began, gave 32,000 visitors, and the total was brought up at the close to 44,278. The mystery of these figures may, no doubt, be explained hereafter, but in the mean time we may say that, in the opinion of those best qualified to judge of the numbers, there were upwards of 70,000 visitors present. The dais, where the chief portion of the receptions was to take place, was erected over the site intended for the exhibition memorial of 1851. The throne was the same as that used at the opening ceremony, and the workmen were still engaged in its completion as the public were admitted to the gardens. Round this throne, at either side, the visitors collected in dense rows, quite encircling the reservoir, and stretching down the centre avenue to the exhibition. Viewed at a little distance and from an elevation, the assemblage as thus distributed round the reservoir had a most curious appearance. The water looked like a gigantic mirror, and the visitors its richly-colored frame. As in the building, so in the gardens, there was no lack of music. Bands were everywhere—in the conservatory, the music-houses, the terraces, and on the lawns. All, however, were thus heard to advantage, and none interfered with the other.

The first small elements of the procession were, as usual, collected round that great public and private rendezvous—Benson's dock. Here the jurors and their chairmen collected in every variety of morning and evening dress, uniforms naval, military, and volunteer, court costume, academic and civic robes. One or two were conspicuous in many-colored silk embroideries, while others were radiant with gold lace and bullion.

As the weather at this time looked very threatening, it was thought advisable to commence the proceedings at once, or, at least, to bring out all the jurors into the open air. Headed by the band of the Royal Engineers, they passed into the gardens, sweeping round the west side to the foot of the raised dais; they here stopped. It was then half-past twelve. The gardens and the building were thronged, though the returns at this time showed little over twenty-five thousand visitors. In the conservatory the members of the cabinet, the royal commissioners for 1851, the Lord Mayor and his suite, the council of the Society of Arts, the council of the Horticultural Society, and the members of the finance and building committees, had been gradually assembling, the arrival of each notability being always announced by cheers, more or less vehement, from the crowd outside the northern entrance to the gardens. Earl Russell was among the first arrivals, and therefore to a great extent escaped recognition from the crowd, as did also Mr. Gladstone and Mr. Disraeli. Lord Palmerston, however, *was* recognized, and the cheers with which he was greeted could be plainly heard in the gardens, just as the cheers he afterwards received in the gardens could have been heard outside.

His royal highness the Duke of Cambridge, attended by Colonels Tyrwhitt and Macdonald, came in shortly before one o'clock. Then followed, in rapid succession, Lord Taunton, Mr. Lowe, Sir Charles Eastlake, Sir George Grey, the Duke of Argyle, the Duke of Newcastle, Sir Cornwall Lewis, Sir Charles Wood, Lord Portman, Mr. W. Cowper, Sir A. Spearman, and Mr. C. W. Villiers. The royal commissioners for the present exhibition, Lord Granville, the Duke of Buckingham, Sir W. Dilke, and Mr. Fairbairn, received all as they arrived. Among the first of the special international representatives was his highness the Pasha of Egypt. He wore the plain blue frock-coat and fez of a Turkish officer, but his breast was covered with stars and orders. His royal highness Prince Carignan was in full uniform, and when he issued forth in the procession, was taken by many for Prince Louis of Hesse, whose name was in the official programme, but who, of course, was not present. The following are those who did in fact take part in the ceremonial:

Austria.—His excellency Count Appongi, ambassador at the Court of St. James.

Bavaria.—His excellency M. de Oetto, minister at the Court of St. James.

Belgium.—His excellency M. Rogier, minister of foreign affairs, Belgium.

Brazil.—His excellency Commander Francisco Ignacio de Carvalho Moriera, minister at the Court of St. James.

Denmark.—His excellency M. Torben de Bille, minister at the Court of St. James.

Ecuador.—His excellency Senor Antonio Flores, minister at the Court of St. James.

France.—His excellency M. Thouvenal, Senator of France and minister of foreign affairs.

Frankfort.—Senator Bernus.

Hanover.—His excellency Count A. Kielmansegge, minister at the Court of St. James.

Hanse Towns, (Bremen and Hamburg.)—M. George Joachim Göschen, Hanseatic consul-general in London.

Italy.—His royal highness Prince Carignan.

Mecklenburgh-Schwerin and Mecklenburgh-Strelitz.—Baron de Maltzahn de Vollrathsruhe.

Netherlands.—M. J. W. L. Van Oordt, president of the royal commission of Holland.

Portugal.—His excellency Count H. E. Lavradio, minister at the Court of St. James.

Prussia.—His excellency Count Rederu, minister to his Majesty the King of Prussia, at Brussels.

Saxony.—His excellency Baron de Buist, president of the council and minister of the interior to the King of Saxony.

Spain.—His excellency Don Antonio Gonzales, minister at the Court of St. James.

Sweden and Norway.—Baron Beck Friis, chargé d'affaires for Sweden and Norway.

Switzerland.—Mr. John Rapp, consul-general for Switzerland.

Turkey.—His highness the Pasha of Egypt.

United States.—His excellency the Hon. Mr. Adams, minister at the Court of St. James.

Würtemberg.—His highness Prince Hermann of Saxe-Weimer Eisenach.

It was one o'clock as the last of these representative guests arrived, and at once the *cortége* quitted the conservatory and passed down to the dais and throne. The Viceroy and Prince Carignan walked on either side of the Duke of Cambridge, and all these were loudly cheered, though not more, if even as much, as the Premier. Lord Granville, too, received a special and most cordial welcome. On the dais the whole *cortége* formed in a brilliant group, while Lord Granville, accompanied by his brother commissioners, advanced in front of the throne, and addressed the international guests as follows:

"I have the pleasure of welcoming, on the part of her Majesty's commissioners for the international exhibition, the distinguished representatives of foreign nations who honor us by taking part in the proceedings of this day. The readiness with which the governments of foreign countries have responded to the invitation of the English government is highly appreciated by the people of this country. I have now to request that the special representatives will receive the report of the council of chairmen of juries. The awards will then be delivered to her Majesty's commissioners. We invite the assistance of the special representatives to make the awards known in the building, as it will be agreeable to the exhibitors of the several countries to learn from a distinguished representative of their own nation the appreciation by the juries of their successful labors. In passing through the building, the special representatives will not fail to observe that the industry of all nations has shown a remarkable development, which, justifying the anticipations of an illustrious prince—now, alas! no more—owes much to the facility given by such exhibitions for comparing the state of industry in each country, and affords a starting point for further progress."

Lord Taunton, as president of the council of the juries, then read the following very interesting report:

"The work of the several juries having been brought to a termination, it becomes the duty of the council of chairmen to explain the manner in which the juries were constituted, and the result of their labors.

"The juries consisted of English and foreign members in varying proportions. The English jurors were in the first place nominated by exhibitors, and, these nominations having been carefully considered, her Majesty's commissioners invariably appointed such persons as appeared to be named by the general agreement of a trade or district. In cases where the nominations were not made on a common understanding, the royal commissioners were guided in their choice by the number of votes given to particular individuals, and, in some instances, by the desire expressed by exhibitors that the commissioners should themselves select persons possessing the necessary qualifications.

"The British colonies were represented by jurors recommended by the several colonial commissioners.

"Foreign nations taking part in the exhibition had a right to nominate one juror for every class in which they were represented by twenty exhibitors, and for every section of a class in which they had fifteen exhibitors. As an alternative, each nation had a certain number of jurors allotted to it, in proportion to the space which it occupied in the building, and several countries accepted this alternative. Her Majesty's commissioners, without fixing any arbitrary proportion between foreign and English jurors, appointed as many of the latter to each jury as the experience of past exhibitions showed to be necessary for its efficiency.

"The juries were 65 in number, grouped so as to form 36 classes, or head juries, corresponding to the 36 industrial classes under which the objects are arranged in the exhibition. Each of these head juries, when subdivided into sections, acted as a united body for the confirmation of awards. Before, however, these awards were considered final, they were brought before and received the sanction of a council, consisting of the chairmen of the 36 head juries. The chairmen forming the council which regulated the affairs of the juries were nominated by her Majesty's commissioners from the jurors of different nations, a number being allotted to each country relatively to the space assigned to it in the building. The council was presided over by a chairman appointed by her Majesty's commissioners.

"Her Majesty's commissioners decided that only one description of medal should be awarded by the juries. This decision considerably facilitated their labors, as it became necessary only to reward excellence wherever it was found, without reference to competition between exhibitors. As the work of the juries advanced, it was ascertained that many articles possessed excellence of a kind which deserved a special mention, without, however, entitling them to a medal; and although it involved some departure from the principle that had been originally laid down, yet the council of chairmen acceded to the wish of the juries, and permitted such cases to be classed and published under the title of 'honorable mentions.'

"The jurors and their associates engaged in examining the objects of the exhibition amounted to 615 persons, of whom 287 were foreigners and 328 English. They are men of high social, scientific, and industrial position, drawn from nearly every civilized country in the world. Their labors have occupied two months, and have been of the most arduous description, as they had to examine the objects displayed by at least 25,000 exhibitors. It can scarcely be expected that none of the articles exhibited have escaped their attention. In a few instances the delay of arrival or of arrangement has rendered it impossible for the juries to examine every article now within the building; while, in other cases, errors in classification have rendered it doubtful to which of the juries the duty of examining some particular object should fall. Every effort, however, has been made to conquer these obstacles, and the omissions, if any, must be very few in number, and are not owing to the want of attention of the juries, or of the officers engaged in facilitating their work.

"The number of medals voted by the juries amount to nearly 7,000, and the 'honorable mentions' to about 5,300. The proportion of awards to exhibitors is greater than in the international exhibition of 1851, but less than that of 1855.

"Notwithstanding the varied nationalities represented in the juries, it is gratifying to record that the utmost harmony has prevailed during the whole time that the jurors have been associated in their labors. The mutual dependence and intimate alliance between the industries of the world have been illustrated by the zealous and impartial efforts of the jurors of different nations to recognize and reward merit displayed in the exhibitions of their industrial competitors.

"We are glad to observe that the state of industry, as shown in the international exhibition, gives evidence of a singularly active and healthy progress throughout the civilized world; for, while we find every nation searching for new raw materials, or utilizing products hitherto considered as waste, we are struck especially with the vast improvement in the machinery employed to adapt them to industrial purposes, as well as with the applications of science, and with the great and successful attention which is now given to all the arts necessary to gratify our taste and sense of beauty.

"We cannot conclude this report without expressing our obligations to Dr. Lyon Playfair, the special commissioner for juries, for the constant and intelligent assistance which he has rendered to us throughout our labors, as well as to the deputy commissioners and secretary, who have acted under his direction, and have afforded efficient aid to the several juries during their inquiries."

To these addresses the Duke of Cambridge made the following reply:

"In performing the duty intrusted to me by her Majesty on this occasion, I have great pleasure, on behalf of the representatives of the various nations which have taken part in this exhibition, in receiving from your lordship an account of the labors of the juries. All countries owe a debt of gratitude to the large number of jurors who, at a great sacrifice of time and personal convenience, have gratuitously undertaken a work of such an arduous description. The efforts made by so many distinguished men of different nations to recognize and reward the exhibitors from all parts of the civilized world cannot be too highly appreciated. I have every confidence that the decisions of the jurors will meet with general approbation, and that the knowledge acquired by them in the discharge of the duties which they have so well performed will be the means of giving a new impulse to industrial progress in the countries which selected such eminent representatives of their scientific and manufacturing skill."

This ceremony over, the jurors each passed in front of the dais, bowing to the royal and distinguished personages there assembled, and passing down at the eastern side and ranged up in line, waited till those who were to take a chief part in the ceremony had gone to the front.

The procession then formed in the following order:

State trumpeters.
Special international representatives.
Her Majesty's commissioners for exhibition of 1862.
Her Majesty's ministers.
Her Majesty's commissioners for exhibition of 1851.
The right honorable the Lord Mayor of London and suite.
The jurors, special commissioner, deputy commissioners of juries, and secretary.
Members of building committee, architect, and contractors.
Financial officers and assistant secretary.
Council of the Society of Arts.
Council of Horticultural Society.

Passing around the northeastern end of the horticultural gardens, along a pathway which was lined on both sides by a thickly-packed crowd, the procession entered the building at the north end of the eastern annèxe, and the loud fanfare from the trumpeters announced to those in the building that the spectacle for which they had been patiently waiting for some hours was at last approaching. The first award was delivered at the northern extreme of the eastern annèxe, where were assembled the committees of classes—3, (substances used for food;) 4, (animal and vegetable substances used in manufactures;) and, 9, (agricultural implements.) Here a slight halt was made, and the Duke of Cambridge handed to Mr. Wolloton, the mayor of Liverpool, and the Earl of Clancarty, the chairmen of these committees, the awards in their respective classes. At the south end of the annèxe, the awards for mineral and chemical products were delivered to the mayor of Swansea and Mr. Stenhouse, F. R. S., and the procession then entered the main building, and passed along the eastern side of the northeastern transept to the eastern dais, where, at the foot of the Victorian gold trophy, were assembled the representatives of the British colonies. Here a long halt was made, while the Duke of Cambridge distributed the awards in this class. To many persons this was one of the most interesting parts of the ceremony. The magnificent display which has been made by our colonies has created a deep impression on all who have visited the exhibition to study it seriously.

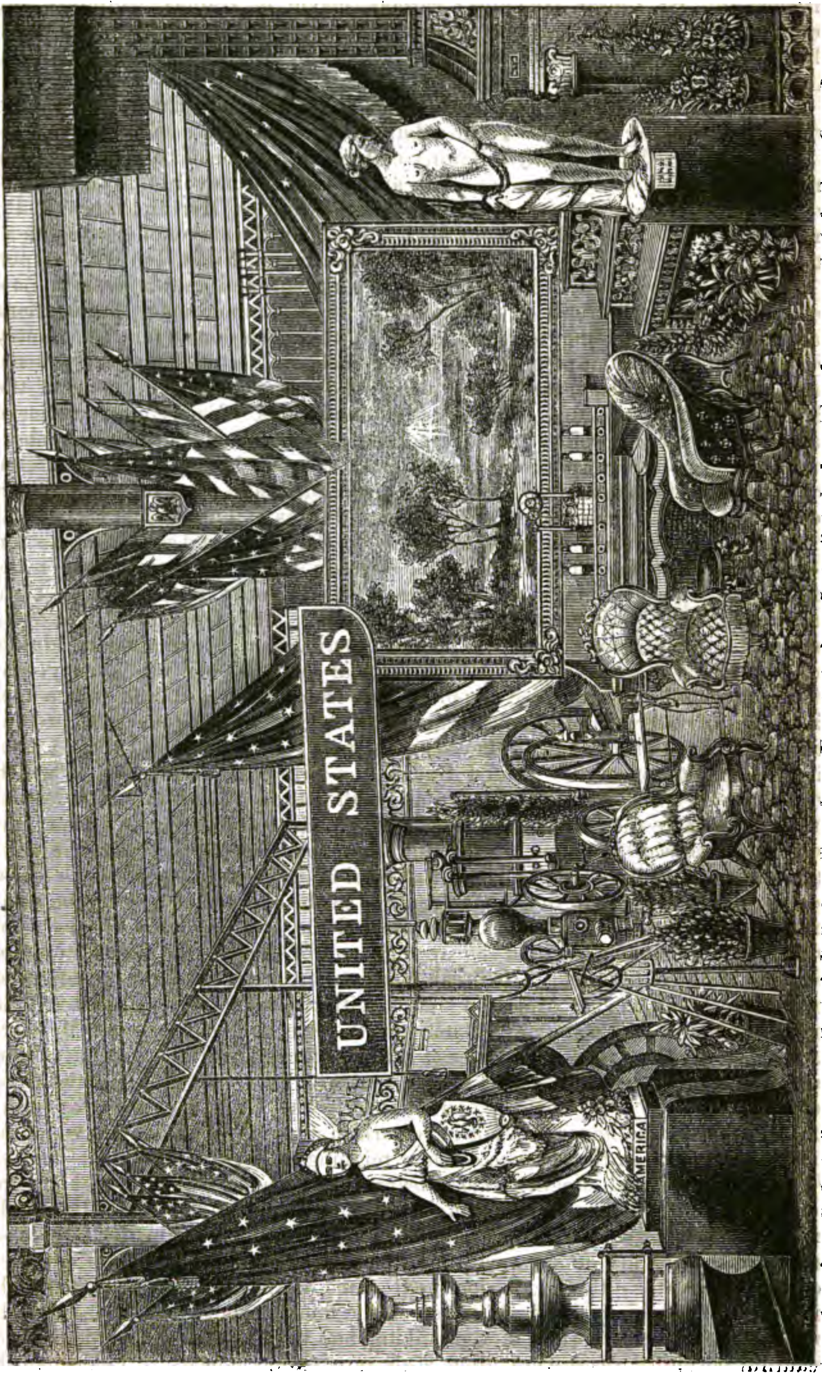
On foreigners, particularly, these courts, through which visitors seeking only for something striking have past heedlessly, casting only a passing glance at their manifold natural riches, have conveyed a more striking idea of the greatness of England than even the varied marvels of industrial skill and energy which are to be found in those parts of the building devoted to Great Britain proper. The extent of the British empire was more completely typified by that small group congregated around the gold trophy than by any of the most eloquent metaphors which have hitherto been in use among poets and orators. There were their representatives, not only from every quarter of the globe, but from every climate, almost from every degree of latitude from the frigid to the torrid zone, not to go into the more complex divisions of ethnology. Considering the pains which each of our colonies has taken, with hardly a single exception, to give to the world an adequate idea of its peculiar resources and capabilities, the immense difficulties of transport which some of them have to contend with, and the general success which has attended their efforts, it was no wonder that in advancing to receive the awards from the Duke of Cambridge their representatives were loudly cheered. Dr. Forbes Watson and Mr. Dowleans, to whose joint energy and care is owing that wonderful epitome of the vast resources of our Indian empire which has attracted so much admiration, first advanced to receive the Indian awards. The representatives of the North American colonies followed: For Canada, Sir W. Logan; Vancouver Island, Mr. A. T. Langley; Captain Mayne, for British Columbia; New Brunswick, Mr. Daniel; Nova Scotia, Mr. Uniacke; Prince Edward Island, Mr. Hazard; Newfoundland, Mr. Gisborne; and Bermuda, Mr. Tucker. The awards for the West Indian colonies were received by Mr. Harris, for the Bahamas; Barbadoes, Mr. Cave, M. P.; British Guiana, Sir W. Holmes; Dominica, Mr. Simmonds; Jamaica, his excellency C. H. Darling; St. Vincent, Mr. Stackpole; Trinidad, Mr. Rennie. The African colonies came next, represented by Mr. Sergeaunt, for Natal, and Mr. Solomon for St. Helena. In this division Liberia, represented by Mr. Gerard Buxton, was classed. The next division included the great Australasian colonies, which fill so important a space in the colonial display. Mr. Hamilton received the awards for the parent colony of New South Wales; Mr. Marsh, M. P., for Queensland; Sir E. Barry, for Victoria; Sir R. Macdonnell, for South Australia; Mr. Andrews, for West Australia; Sir H. Fox Young, for Tasmania; and Mr. Morrison, for New Zealand. Ceylon was represented by Mr. R. Power; the Mauritius by Mr. Morris; Hong Kong by Mr. Campbell; Malta by Mr. Inglott; and the Ionian Islands by Mr. Drummond Wolff. In this class, also, were distributed the awards for miscellaneous foreign stations, represented by Mr. M. Hopkins; Japan, represented by Mr. Rutherford Alcock; Siam and the Fejee Islands. Passing around to the south side of Minton's Fountain, the procession next halted at station No. 4, where were assembled the committees of classes 6, 10, 11, 12, 25, 26, 31 and 32. To the chairman of these classes the Duke of Cambridge distributed the awards, in the following order:

Carriages, master of the coach-maker's company; civil engineers, building, &c., Sir J. Paxton; military engineers, Colonel Shafto Adair; naval architecture, Captain Sir F. Nicolson; skins, furs, &c., chairman of the Hudson's Bay Company; leather, J. B. Bevington; general hardware, mayor of Birmingham; steel and cutlery, mayor of Sheffield.

As the procession rounded the south side of the fountain, where were stationed the united bands of the 2d Life Guards and Royal Horse Guards, to the head of the stairs, the view down the nave was magnificent. There was a clear vista from one end of the building to the other, interrupted only by the Glasgow obelisk, and the broad path which ran down the centre was lined entirely by ladies, whose gay summer dresses formed a fringe on both sides. Just at this moment, too, the sun, after a long struggle, broke from behind the thick clouds which had shadowed him all the morning and lent a few rays, which played over the glittering mass and gave an additional beauty to the scene. The regulations laid down by the commissioners, which appropriated the seats to ladies only, were strictly complied with, and throughout the long line there was hardly a break in the rule of "ladies to the front." Seen from the eastern dais the scene was brilliant enough, but to those who had secured places at the western end and watched the procession as it advanced towards them, the *coup d'œil* must have been still grander. At the opening ceremony, where the procession squeezed painfully through two narrow pathways at each side, there was nothing comparable to the splendor of the moving panorama of the procession as it swept down the nave. At the Norwich gates the committees of classes 13, 15, 16, 17, 22, 30, 33, 34, 35, and 36 were assembled. Their chairmen received the awards from the Duke of Cambridge in the following order:

TROPHY ERECTED BY THE UNITED STATES DEPARTMENT

On the occasion of the Grand Distribution of Awards at the International Exhibition, London, July 11, 1862.



Philosophical instruments, Sir D. Brewster; horological instruments, master of the clockmaker's company; musical instruments, Mr. Broadwood; surgical instruments, Mr. Cæsar Hawkins; carpets, mayor of Halifax; furniture and decoration, Mr. Crace; precious metals, master of the goldsmiths' company; glass, Mr. Chance; pottery, Alderman Copeland, M. P.; dressing-cases, &c., Alderman Mechi.

A few yards beyond, the procession again halted opposite Emanuel's trophy, where the following awards were distributed to the respective chairmen:

Photography, the Lord Chief Baron; cotton, the mayor of Manchester; flax and hemp, the Provost of Dundee; silk and velvet, the mayor of Macclesfield; woollen fabrics, the mayor of Bradford; printed fabrics, Mr. E. Potter, M. P.; tapestry and lace, Sir S. Northcote, M. P.; clothing, the mayor of Nottingham; stationery, master of stationers' company; educational, Right Hon. W. Cowper.

This was the last station in the British department, and the procession now passed into the foreign half of the building, where extraordinary preparations had been made to do honor to the occasion. The commissioners for each country were assembled in front of their courts, and each station was tastefully decorated with national flags, rare exotic plants, and occasionally with some of the choicest works of art from their respective exhibitions. Each country seems to have vied with each other to make the best show, and, considering the short time there was to perform the work, the greatest praise is due to all the foreign commissioners for the zeal with which they seconded, and often outran, the suggestions of their superintendent, Mr. Owen. It was at Turkey and Egypt that the first awards in the foreign department were delivered, and as the procession neared this point the Arab band of the Viceroy, which was stationed in the rear, struck up a wild and exultant strain, which it would be difficult to class under any school known to western professors. The Duke of Cambridge's task was now nearly over, and the special international commissioners' duties began. The Viceroy of Egypt was the special commissioner for Turkey, and his highness, who accompanied the procession from first to last, and was a special object of interest throughout, was loudly cheered as he advanced to present the awards for Turkey, and to the commissioners for his own pashalic. Opposite was the station of the United States, the principal decorations of which were Cropsey's fine picture of "Autumn on the Hudson" and the great steam fire-engine. Here the awards were presented by Mr. Adams, the American minister, and received by Colonel B. P. Johnson, commissioner. Rome, the next station, was beautifully decorated with several of the best mosaics which have been so much admired in the Roman court. In the absence of any special commissioner, the Duke of Cambridge presented the awards to Mr. Doyle, who, with Signor Bompiani, has had the arrangement of one of the most attractive portions of the exhibition. His royal highness also performed the same office for the south and central American States, with the exception of Brazil. This important empire had a station to itself, and the special commissioner, M. Carvalho Moreira, the Brazilian minister at this court, presented the awards. The station of Portugal was fixed just on the spot where Dr. Salviate's mosaics have lately drawn such large crowds; and next to it was Italy, in such close conjunction that it was impossible not to remark in it a type of the union which is to take place soon in the alliance of their reigning houses. The great bust of Victor Emanuel, and Magni's *chef d'œuvre*, "the reader," were the chief ornaments of the Italian station. Count Lavradio presented the awards to Portugal, and the Prince Carignan to the Italian commissioners. Passing by Greece—where, in the absence of any special commissioner, the Duke of Cambridge presented the awards—the procession next came to the Russian station, which made an extraordinary display. Some of the finest mosaics and bronzes which are the boasts of this portion of the building had been brought forward, and the beautiful porphyry vases were filled with rare exotic flowers. The Spanish factures, combined with excellence of design, novel application of known discoveries, increased utility, combined with novelty, beauty, excellency of workmanship, and utility.

Dressing and travelling cases were to be judged of by novelty of material or application, excellence of design, material, workmanship, and cheapness.

It will be seen that if these general instructions were carried out fairly, as it is believed they were in a very great degree, the exhibitors could have little cause for complaint. The jurors might, and they undoubtedly did, differ with the exhibitors as to the merit of particular articles, but the grounds upon which their decisions were based were such as to command the general acquiescence of the exhibitors as to the decisions finally made.

The exact number of medals voted by the juries was 6,992, and the honorable mentions to 5,308; total, 12,300.

Every effort was made to have every article present examined by the juries, and it is believed the omissions must be comparatively few in number; the juries being desirous of giving attention to every article entered.

As regards the exhibition from the United States, although limited in number for reasons given in this report, every desired attention, it is believed, was shown to them by the jurors, as will appear by the awards which were made to articles from the United States.

Jurors from the United States.—There were only five jurors representing the interests of the United States, viz: F. B. Taylor, on class 8, machinery in general; Wellington Lee, class 9, agricultural machines and implements; Frederick Symth, class 14, flax and hemp; J. R. Black, M. D., class 16, musical instruments; Henry Stevens, F. S. A., class 27, stationery. Mr. Taylor was also assigned to a special jury on fire-engines.

It is due to the intelligent gentlemen comprising the juries, to state that they manifested an earnest desire to do full justice to all the exhibitors. The English jurors, who comprised more than half of the whole number, were selected with great care, and were men well qualified to judge in their respective classes; and so far as we had information, they evinced a desire to examine the articles presented before them with great fairness, and to reward merit wherever found, without regard to the place from which it came.

The exhibitors from this country were placed in a very different position from those of other countries; no provision being made by the government for conveying even the articles as in 1851; nor was any provision made for the expenses which necessarily had to be incurred after the arrival of the goods at London. Under these circumstances, great credit is due to those exhibitors who had the enterprise to represent their country in this great exhibition, such as the world had never before witnessed, and that in a manner, as the result proved, most creditable to our country. When the inquiry was made, as it often was, at the United States department, "why we were not more fully represented," and when the reason was given as above, the expression uniformly was, "*Under such circumstances, you have done well for your country.*"

The awards which have been given to our articles are the best testimonials we could desire for our country. It is believed that the United States exhibitors have presented more new and valuable inventions than any country represented in the exhibition, and had the articles which were approved by the executive committee of the United States commissioners at Washington been all on exhibition, we feel assured that the result would have showed a larger number of new and useful inventions than from all the other countries which were represented in the exhibition. Enough, however, was shown to exhibit to the world the enterprise and ingenuity of our citizens; and that, since 1851, our country had been alive to the advance that was necessary to be made in articles of utility and comfort, adapted to all classes and countries. No higher tribute was desired than that which was given to the articles on exhibition; that they were calculated to benefit mankind, to reduce "the cost of production in agriculture, commerce, and the mechanic arts," as did those shown in the exhibition of 1851. A distinguished English gentleman, connected with both exhibitions, said to me, after the juries had completed their awards, "You have taken as large a share of the prizes as in 1851." I said to him, "this was unexpected; but if the articles we had entered, and which were ready to be forwarded, had been present, I should have expected such a result."

I examined the industrious and useful divisions of the exhibition with care and attention, and while I found a very great advance in these departments since the former exhibition, it was apparent that the improvements had resulted from that exhibition mostly, and but comparatively few new implements and machines were on exhibition. Changes had been made, implements and machines simplified and cheapened in price, and far better adapted than formerly to the demands of the world.

Until the jurors had added their sanction to the value of our contributions, but little attention was given to the United States department; but when the awards of the six hundred and fifteen jurors had been officially announced, the United States department was no longer without a crowd of visitors daily to see what had come from this far off land (where a contest, unexampled in the history of our race, was being carried on) to benefit the world. A short time after the awards were officially proclaimed, the leading papers in London, in giving the account of the persons in attendance the preceding day, remarked, "that the great rush was to the machinery in motion; next to that, to the United States department, which had many clever articles, and the award of the jurors had stamped their value in the way of new and valuable inventions, and the public was advised to give attention to this part of the exhibition, which was of great value." This advice was heeded, and the United States department did not fail of receiving attention from the first in the land, and from the most distinguished from foreign countries; while the great middle class, for whom we labor and to whom our inventions will bring relief, were ever on hand, in large numbers, examining with great scrutiny the inventions from which they hoped to receive benefit as they did from those in the exhibition of 1851, which are to be found not only in Great Britain, but in every country on the globe where agricultural implements and machinery are used.

THE EXHIBITION.

It cannot be expected that I can go into detail of the contributions of the 25,000 exhibitors who were represented in this great exhibition of the industry of all nations. I can only take notice of the articles in the different departments which seem to me most important, and especially those which appear to be adapted to this country. In the remarks which I shall make, I shall avail myself of all the facilities which I can obtain to give a correct general account of the different departments of the exhibition, and the United States contributions which were deemed worthy of special commendation by the juries will receive more particular attention, not only as justly due to them, but also more important and useful to our country.

I shall take up the contributions in the order in which they were classed by the royal commissioners, as that will more readily bring before the reader the excellence of the whole. My remarks on each of these will be brief.

THE FIRST DEPARTMENT, CLASS 1.—*Mining, quarrying, metallurgy, and mineral products.*

The number of entries in this class was 1,955, as appears by the report of the jury. In this division England far exceeds the other nations in the contributions which have been made. The exhibition in this class was one of extraordinary merit; such a series of collections, so ample, and affording such an opportunity for comparison, as the world had never before seen.

Among the American exhibitors, Joseph W. Feutchwanger, of New York, exhibited over 1,000 specimens of American minerals. This cabinet embraced very valuable specimens of minerals.

Thomas Meads, of Lake Superior, presented a splendid cabinet of copper and silver ores, crystals, and native metals, for which an honorable mention was awarded.

New Jersey Zinc Company, specimen of spregal iron produced from franklinite, for which an honorable mention was awarded.

J. Moshimer, delegate from Nevada Territory, exhibited a very choice collection of the silver and gold ores and quartz from the celebrated Washoe mines; also, samples of Cinnabar (quicksilver) ore, for which a medal was awarded.

Dr. William Boyle, of California, also contributed minerals.

Dr. C. Precht, of San Francisco, specimens of crystallized gold and California marble; gold quartz from the celebrated mines of General John C. Frémont, Mariposa county, California.

Coal.—The coal division of this class was far in excess of the exhibition of 1851. In 1851 the British islands raised 57,000,000 tons, and in 1862, 82,000,000 tons. Coals were now exhibited from several of the governments in Europe, showing a vast increase in the consumption of coal, as well as in its production.

The section B, in this class, of medical and pharmaceutical products, does not contain anything of very special importance. A medal was awarded to the Philadelphia College of Pharmacy for a fine collection of North American vegetable drugs, and preparations made from them.

CLASS 2.—*Chemical substances and products, &c.*

M. H. Bagley, 61 Canal street, New York, president of the Crystal Carbon Oil Company, Meadville, Pennsylvania, exhibited samples of their oil, clear as water, free from unpleasant odor.

F. S. Pease, of Buffalo, extra refined petrolium for illumination, quite white and guaranteed non-explosive; also coal lubricating oil, and several other very superior preparations, for which a medal was awarded.

The quantity of petrolium oils shipped for the first six months of this year, shows the great importance of this discovery. The amount shipped from New York, Philadelphia, Boston, Baltimore and San Francisco, was 4,545,182 gallons. If we add to this the immense quantity sent from Canada, some idea may be formed of the growing importance of a trade less than three years in existence.

Glen Cove Starch Company, New York, the Oswego Starch Company, New York, Kingsford's silver-glass starch, each received medals.

H. G. Hotchkiss, Lyons, New York, a medal awarded for winter green oil of excellent quality, unsurpassed by any on exhibition; also a medal for excellent essential oils.

Alfred Halls, Lyons, New York, sample of oil of peppermint, for which an honorable mention was awarded. This oil has been submitted to London chemists and dealers, and pronounced excellent, and only excelled by the white English oil, which is much more expensive.

CLASS 3.—*Substances used for food.*

"This division is one of great importance, which brings under the experienced criticism of nearly every nation in the world those articles which constitute the food of man, and domesticated animals. It is not unnatural that we should expect to find the choicest contributions from every country." Gratifying as it is to observe the interest and zeal with which perfection is sought in all the works of science and art, we cannot but inquire anxiously whether agriculture, that most important branch of industry, keeps pace with the universal progress in other directions, and it is therefore with no small satisfaction that we are able to recognize the truth of the remark made by the illustrious originator of this and the last exhibition, that "agriculture, which was once the main pursuit of this as of every other nation, holds, even now, notwithstanding the development of commerce and manufactures, a fundamental position in the realm."

COMMON EUROPEAN CEREALS.—The samples of wheat far exceed in number those exhibited in 1851, nearly every country contributing—Great Britain and her colonies, France, Spain, Italy, Greece, Algeria, Australia, Germany, Russia, Austria, &c. The finest specimens I think were found in the Australian colonies, some samples weighing as much as 68 pounds to the bushel from Algeria and Australia. These wheats were not equal for flouring to the fine white wheats from countries of a colder climate.

Barley, shown in great perfection by Germany, Denmark, Great Britain, Victoria and Tasmania; Prussia showing samples weighing upwards of 59 pounds per bushel, and some from Canada, 56 to 57 pounds. The four and six rowed barley from northern Europe. Naked varieties very fine, from Spain, Portugal, Hungary, Greece, Canada, and Brazil.

Rye.—Though little cultivated in Britain, this is an important crop throughout Europe. It is distinguished as winter and summer rye, and increased attention is paid to its culture on the continent, and superior samples were exhibited from Russia, Prussia, Austria, and Hungary.

Oats.—The common variety is exhibited in much greater perfection by British colonies than by the United Kingdom. Scotland, the favorite country of this grain, has never yet produced samples equal to those sent by Tasmania and Victoria, the heaviest sample in the exhibition from *Tasmania* weighing 51 pounds 10 ounces per bushel. Samples of "white Tartarian" from Victoria, weighing 49 pounds 4 ounces, might be considered as fine. Black Tartarian oats in most European collections, and in Canada, Nova Scotia, and other North American colonies. Naked oats from northern Europe.

In the British collection, the jurors found by the side of a very fine sample of oats, weighing 50 pounds to the bushel, a sample of barley marked "grown from oats." We are surprised how such a delusion could gain credit at the present day.

Indian Corn, or Maize, was exhibited largely by countries whose climates are suited to it, possessing in such climes a range as wide as any other cereal, and constituting a chief source of food for man and the domesticated animals. Besides innumerable samples from Spain, Portugal, Italy, France, Australia, and North America, a very fine collection containing 200 varieties was contributed by the Botanical Society of Modena. Fine samples from the States of Ohio and New York, United States, and some very good specimens from Algeria.

Buckwheat was exhibited in most of the collections from Europe and the North American colonies generally.

CEREALS OF COMPARATIVELY RARE CULTIVATION IN EUROPE.—These consisted of rice, broom-corn, Guinea corn or Indian millet, and sorghum saccharatum or Chinese sugar-cane.

Millet and other small grains were exhibited to a limited extent.

Peas and the bean family were very fully exhibited in most of the European collections.

Grasses and forage plants were extensively shown, mostly from the continent and Great Britain.

Flour and meal.—The exhibition in this division was far more extensive than in 1851, and the jurors say, "generally speaking, in the manufacture of flour and meal. credit is due to the exhibitors for the great progress made since 1851." The English millers have exhibited well, but only to a small extent. Flour made after the German or Gruaux process, hitherto not customary in England, is exhibited in the British collection, and seems a complete success. (This Gruaux process consists in unbranning the grain before it is ground, and the superior article obtained is used for pastry and other choice articles. A machine invented in Maryland previous to 1851 performs this process better than those I saw abroad, is patented in England, and I presume used there.)

The Zolverein is well represented by flour from several parts of Prussia.

Austria, which has always held a high position in the production of flour, has carried the day; and her magnificent productions of German milling are exhibited in a manner most worthy of her. (All who have travelled in Austria must have observed the choice bread found everywhere, and greatly superior to the bread in England and the United States.)

Italy showed some exceedingly fine samples of flour. The Netherlands, Denmark, Bremen, Russia, Spain, and Portugal, are well represented. The extensive milling trade of the United States is very well represented by two exhibitors.

Hecker Brothers, New York—"Superlative wheaten flour," for which they received a medal and high commendation. They exhibited prepared flour, which is ready at all times (by wetting to a thin dough with water or milk) for the oven without yeast, and makes most excellent bread.

Stebbins & Co., of Rochester, New York—a barrel of very superior flour, and were awarded honorable mention. The flour from these mills has attained a high reputation, and as a commercial article will compare favorably with any known commercial brand.

O. Howland, of Auburn, New York, showed numerous samples of cereals, wheat, maize, buckwheat, barley, &c., generally of excellent quality.

H. G. Hotchkiss, of Lyons, New York, furnished small samples of the same varieties for the exhibition.

The Glen Cove Starch Company of New York showed samples of corn flour, called "*maizena*," and they were awarded a medal and received commendation of "exceedingly excellent for food."

The Oswego Starch Company, Kingsford, also exhibited samples of corn for the same use.

J. Waddell, of Springfield, Ohio, samples of Indian corn in the ear. "Honorable mention."

The Onondaga Salt Company, Syracuse, New York, fine samples of table and curing-salt of superior quality and whiteness.

In connexion with this division, the finest and most interesting flour made from maize is that manufactured by M. Bezet, a Frenchman in the Algerian collection, who, as he states, so dexterously removes that part of the grain around the embryo, containing most of the fatty matter, as to obtain a flour capable of great fermentation. This, if successful, as it would seem to be, will be productive of great good where maize forms a leading element in the food of the people.

Hops much more fully shown than in 1851, and were represented by samples from every producing district in England, from the British colonies, from twelve European countries, and from the United States. In regard to delicacy of flavor, brightness of color, and perfection of curing, English hops maintain their well-earned reputation.

Bavaria and Bohemia excellent, and in strength can hardly be surpassed. The other German States are deficient in strength.

Belgium, badly cured generally.

Hops from Canada and the United States exhibit a disagreeable flavor, which renders them unsalable for fine qualities of ale. A few other countries show but of very inferior quality.

Dutcher & Ellery, of New York, exhibited some good samples.

Collections.—Some of these deserve special notice, and are exhibitions of great merit. And first, of the scientifically arranged and instructive collection sent by MM. Vilmorm, Andrieux & Co., of Paris. Expense and trouble do not appear to have been considered in making this collection worthy of the name that celebrated house bears, and it is the most complete display of the kind in the exhibition. Samples of nearly every raw produce referred to in this section are here exhibited. The specimens in straw of almost all the wheats cultivated in Europe are named according to M. Louis Vilmorin, the first authority for the nomenclature and identity of the numerous varieties of the cereal.

Other collections of great merit, one from Mr Vincent Janks, one of the proprietors of the agricultural establishment in Pesth, consisting of 200 small collections of farm produce by the landed proprietors throughout Hungary, was deserving of special notice. The agricultural department of St. Petersburg, cereals, flour, seeds, &c., much commended. M. Hardy, Director du Jardin d'Acclamation d'Algier, two very extensive collections of cereal grains, pulse and oil seeds, admirably arranged and of excellent quality. One other very fine collection from Prussia of cereals, and twenty kinds of kidney beans in seeds and pods.

Great Britain. The exhibition of fine quality, but the number of exhibitors small.

British Colonies. The exhibitions in some of these are decidedly superior to any other, and had we space we should be pleased to give them in detail.

Canada exhibits largely, and the samples generally good; but as a whole, the exhibition is not equal to 1851.

Victoria shows the most select collection in the exhibition of ordinarily cultivated grains. There are fifty-two exhibitors, chiefly of wheat, and also barley, oats, and flour. The heaviest wheat weighs 68½ pounds per bushel, and the larger proportion from 66 to 68 pounds per bushel. It is not only in weight, however, but the general perfection of the grain is also commendable The oats are also very fine, weighing 49 pounds 4 ounces, and barley 58 pounds 5 ounces. This exhibition surprised the jurors, (as it did those who examined it carefully,) with the great agricultural capabilities of the colony.

There were plaster casts, colored, a large collection, illustrative of the fruits and vegetables of the colony, consisting of apples, pears, cherries, plums, strawberries, figs, oranges, melons, &c., for which a medal was awarded. The fruit was all named, and we noticed quite a number of American apples and pears. The northern spy, greening, spitzenburg, pippin, &c., we recollect, and several, also, of our pears. The collection was beautifully got up, and, taking it altogether, in our estimation, far exceeded any other collection in the exhibition.

In this connexion we may, perhaps, as well introduce a sketch of the British colonies and dependencies.

BRITISH COLONIES AND DEPENDENCIES.

These were, in general, very well represented, and much more extensively than in the former exhibition. We give a brief sketch of the contributions from these colonies, which add so largely to the wealth of the mother country. We commence with Canada. On entering the eastern transept, there is a large "trophy," built of large sections of logs, piled one over another, in five tiers, rising almost to the roof. This striking erection was contrived of necessity, there being no wall or floor-space to display the great varieties of wood to be exhibited. It is in the variety and size of its native woods that Canada is chiefly remarkable. Her forests, of two thousand miles in length, produce trees of immense size, and endless variety. There are here two hundred different kinds of timber, most of them from trees which grow to a height of a hundred and fifty feet, averaging eighty feet in straight lengths of trunk before reaching a limb, and sometimes, as in the case of specimens here exhibited, one hundred and twenty feet of branchless trunk. The timber is shown in every stage, from sections of the trunk with the bark, to square logs; from that to planks, and then to polished surfaces. Of the more valuable woods, the black walnut, the bird's-eye maple, and the white cedar, take on a beautiful polish; and of woods specially adapted for furniture and carpentry, there are here about two hundred varieties. Some of the logs are seven feet in diameter, but timber is too plentiful in Canada to tempt the colonists to fell these giants of the forests for ordinary purposes, when they can get logs more manageable for their saw-mills. Besides the timber, the twigs, leaves, and flowers of various trees are shown in properly classified order; as also the tools which the woodsmen "lift up thick trees upon." The familiarity of the Canadians, in handling wood, appears in the kind of axe they use for splitting it. Nothing is more common in England, when wood is to be split, than to find the helve sticking in the piece it was intended to go through. This never happens with the Canadians, for all their axes are constructed with a peculiar bulge in the centre, which effectually prevents any such annoyance. Among the more interesting of the articles made of wood are two models of railway cars, one sixty feet long, intended for goods and cattle, and the other, nearly ninety feet long, designed for passenger traffic. Description of this car from an English paper: "The passenger car is fitted up like the deck saloons of some sea-going steamers, with beds, dressing-rooms, stoves, and every convenience of a well-furnished dwelling-house. There is also a string drawn through each carriage for communication with the driver in case of emergency, and we are informed that no inconvenience is caused by this accommodation. The beds are so arranged as to suit single persons or couples, and when removed in the morning, are conveniently stowed away in the ceiling. Travelling some thousand miles constantly at a stretch, these sleeping cars must be part of the necessary accommodations of railway travellers in Canada; but any one who has travelled from London to Aberdeen, or even Edinburg and Glasgow, by night train, without a break, would probably feel thankful if our own railway companies had the consideration to provide comforts on their line. The iron work, as well as the carpentry and upholstery, of the Canadian railway cars, would appear to be superior. A couple of wheels and axle are shown, which have travelled over a hundred and fifty thousand miles on the Grand Trunk line, with very little wear, indeed. The tires are of iron, but very hard and dense." In the Canadian department there is exhibited a quantity of strong and serviceable agricultural implements, with specimens of native granite and other stones, wheat, Indian corn, starch, arrow-root, flax, cigars, mustard, beeswax, and furs. There is a case of preserved fishes, of which immense shoals are found in the lakes, and preserved specimens of about two hundred varieties of native birds, of which about forty are ducks of different kinds. With a climate corresponding with that of Europe from the latitude of Rome to the North Cape, there are, as may be supposed, great varieties of fruits, of which representations are here given. Forty varieties of apples are depicted; about as many of pears, and representations, in the natural size and color, of peaches, and grapes grown in the open air.

The exhibition from Canada is a very creditable one. We are informed by the president of the Canadian Agricultural Society, who was one of the jurors, that the exhibition would have been much larger, had a suitable appropriation for expenses been made.

Of the other colonies, Victoria is most largely represented in this exhibition. This is partly owing, perhaps, to the occurrence of the Victorian exhibition of 1861, from which many of the choicest specimens were selected for the international exhibition. The most interesting object, perhaps, in this court, is the apex of a pyramid, forty-four feet nine and a fourth inches high, and ten feet square at its base, exhibited at the Victorian exhibition last year, to represent the quantity of gold exported from Victoria from the 1st October, 1851, to the 1st October, 1861, viz: 26,162,432 ounces troy, equal to 1,793,995 pounds avoirdupois, or 800 tons 17 hundred-weight 3 quarters 7 pounds, equal in solid measure to 1,492½ cubic feet, and of the value of £104,649,728 sterling. The Victoria court is, like all the other colonies, in the eastern transept, and the entrance to it is through a great portico formed of large bales of wool, piled up to form piers, carried across to form the entablature, and raised in a semicircle over all, to represent the archway. Gold is now the leading article in Victoria, and it is said 10,000 ounces of it is the amount shown. A quartz-crushing machine is on exhibition, and the process of washing out the gold was exhibited, and in operation most of the time. A large vessel nearly filled with gravel and other materials from the gold formation, and covered with water, is operated upon by a gold digger, with a pan and long handle, with which he digs up the bottom, and when the water is exhausted, the shining particles of the precious deposits are found, and many a spectator, we doubt not, would have been willing to change places with the digger, for a short season at least. Of agricultural products, some extraordinary fine specimens were exhibited. Wheat, as fine as we have ever seen, weighing 69 pounds 4 ounces per bushel, was exhibited, the produce of this colony, and a large variety of other articles.

Tasmania is located adjoining Canada; has a fine collection of woods, coal, and other articles.

New South Wales produces sea-island cotton, grown at Hunter river. Its quality is fine, though not equal to American sea-island. The exhibition from this colony is very extensive: wheat, Indian corn, fruits preserved, and among the apples very large specimens, almost equal to California; among them we noticed several American varieties, much larger than the fruit grown in the northern States. Wine was shown very extensively, and a fine collection of stuffed animals was exhibited.

From Queensland there is a large glass case of birds and native grasses, very tastefully grouped. The implements of the aborigines are also shown, and a great variety of woods. Native cotton is shown, raw and manufactured, and wool, also in both states; among the woollen fabrics are some plaids, in Scotch style. Furs, soap, oils, and minerals have a place.

In the South Australian court there was a very interesting and complete geological collection, and large specimens of marbles and minerals, including silver and lead ore, and some magnificent lumps of pure copper ore. Wool is also exhibited, along with a great many different kinds of fruit, including all our garden fruits, and others grown in more genial climates. A specimen of mechanical invention is shown in the shape of a reaping machine, which, if not equal to some in this country, is very creditable to an inventor who has not the opportunity of seeing frequent matches of reaping machines.

Nova Scotia has a fine collection of stuffed birds, and a large elk, but not equal in size to the specimen in the museum at Albany, United States. There are specimens of the colonial gold, the quartz in which it is found, and a gold washing machine. Among the manufactures of the colony are hides, furs, muffs, ship's tackle, ploughs, and many agricultural implements; upholstery and furniture, and a sample of a very handsome carriage. In the food department the Nova Scotia red herring have, of course, a first place; and then comes salmon, cod, mackerel, and other fish, monster lobsters, maple sugar, honey, bear's grease, &c. Among the natural products are specimens of the coal oil, and a pillar of common coal in section, between thirty and forty feet high.

New Brunswick is rich in tools and agricultural implements, and among its raw produce exhibits coal and many varieties of wood. Among the curiosities in this court is the war dress of an Indian of the Melaceet tribe, from which it would appear that savage nations resemble civilized; or, perhaps, we should rather say, civilized resemble savage nations in surrounding the soldier with all the trappings of gaiety and glory.

Prince Edward Island is also represented by Indian corn among its raw produce, and among its manufactured articles a reaper, a model of a saw-mill, harness, cheese, &c.

Jamaica occupies a good deal of space in the exhibition. Among the manufactures in this court there are dish-mats and other articles made of cocoanut fibre, and window blinds made from the ribs of cocoanut frond. Among the raw produce there are rice, limes, oranges, guano, spices, and tobacco; and a great variety of parcels of cotton, from which it would appear that the Jamaica planters are beginning seriously to contemplate cotton as one of the crops most likely to prove lucrative. There are also specimens of a number of native mineral ores—iron, copper, lead, zinc, cobalt, lime, sulphur, &c.

British Guiana sends a few of her natural products, and a very attractive case of preserved birds and monkeys, and a number of beautifully large and brilliant butterflies. In the same section there is the model of a barn built by an Indian, up the Berbice river; it shows a large amount of mechanical ingenuity.

India shows carving of inlaid work on the ebony and ivory bones and cabinets, and other furniture is exceedingly beautiful. The specimens of India shawls, crape, &c., is also very superior, as well as the silver and gold ornaments, and the ornamental armor. A great number of specimens of cotton are shown; a large variety of flax and its products; with silk raw and manufactured, with specimens of silk-producing insects. The Cotton Supply Association of Manchester, England, exhibit in this department twelve webs of prints, manufactured exclusively from Indian cotton. There is no section of the exhibition so complete and perfect as the Indian, and no country of which one can get so vivid an idea, from the minute and thorough way in which the whole employments and habits and customs and circumstances of the people are exhibited in models and pictures, or specimens of their dress and handicraft. Of the physical condition of the country, an admirable idea is given by a very large relievo map or model of the whole peninsula.

From Ceylon there is much the same sort of articles as from India, specimens of fine work in ebony, ivory, and shell, with specimens of raw cotton, and of the satin wood and other woods.

SECTION B.—*Preparation of food for consumption.*

There is a very good exhibition of the various preparations of food from different countries. Cheese was exhibited from several countries, and an advance in its manufacture and increase also; but no information was given as to the *process* and extent of manufacture of the different kinds of cheese in the several countries, nor of the quantity used for inland consumption or export. The United States was not represented in this division.

CLASS 4.—*Animal and vegetable substances used in manufactures.*

In this class Wilkins & Co., of New York, exhibited bristles and hair; a medal was awarded, and the articles highly commended by the jury. F. S. Pease, of Buffalo, was awarded the prize medal for "an excellent collection of oils," chiefly animal. In this display he exhibited machinery oil, which was carefully tested on machinery in the exhibition, and gave universal satisfaction; also signal burning oil for headlights and railway carriages—a very superior article, (car and axle oil,) extensively used on American railroads, and these oils will stand the highest heat, even of melted lead, (600° Fahrenheit,) without change. Extra refined winter lard oil, which stands a temperature of 30° Fahrenheit without congealing. Armor oil, the best extant, for guns, locks, and fine machinery; and sewing machine oil, which is pronounced by all who use it to be the very best oil yet produced for sewing machines—a prize medal was awarded to these oils.

R. A. Tilghmann, Philadelphia, a medal for fatty acids obtained from aqueous saponification.

CLASS 4, S. D.—*Perfumery.*

Under this head a medal was awarded to H. G. Hotchkiss, Lyons, for very fine specimens of American essential oils, as noticed *ante* Class 3, and an honorable mention also to Alfred Hall, Lyons, for essence of peppermint, highly commended, and before reported.

CLASS 5.—*Railway plant, including locomotive engines and carriages.*

There were a great number of locomotive engines exhibited, highly finished, but the jury remark "that there is little of novelty in the construction of the greater proportion of the large number of locomotive engines, when compared with those running and exhibited in 1851."

There is, however, a large increase in the weight of locomotive engines, said to arise from the competition for traffic on the different roads.

Nearly all the locomotive engines are now constructed to burn coal instead of coke, in order to diminish expense, and saving the difference between the cost of coke and coal.

The permanent way of the railroads has been made stronger than formerly, a heavier rail, and a greater number of sleepers. Canada exhibited models of sleeping and freight cars, made after the patterns used in the United States.

The English locomotives have no shelter for the engine driver and fireman, but they are exposed to all weathers. No accommodations of closets in passenger cars. It is a little remarkable that these so palpable conveniences should be withheld. The jurors remark that many articles entered could not be found. This was true of some American articles which were not passed upon, but of real merit in this class.

Lawrence & White, of Melrose, New York. Lock, nut, and ratchet washer. A novel method of giving to bolts the firmness of rivets; a most excellent device. The nut works within a flanged washer, which flange is cast with a rack on its inner edge, into which a light spring attached to the nut plays, thus securing the nut from change of position by the jar or vibration of moving bodies.

J. C. Hoadley, Lawrence, Massachusetts. Model of locomotive truck.

George F. Train, Boston. Model of street railway passenger car.

A. H. Howard, of Allegheny City, Pennsylvania. Railway car-bumper.

W. H. Ward, Auburn, New York. Self-centering time table for railroad purposes. A very useful and valuable article.

John Warner, Philadelphia. Model of earthwork and a stereometric tablet for the computation of excavation and embankments.

CLASS 6.—*Carriages not connected with rail or tram roads.*

The English carriages, much lighter than formerly, and show excellent workmanship and materials. There were 167 exhibitors in this department. Two light wagons from Brewster & Co., 347 Broome street, New York. The judges say: "America, which only contributes two very light carriages, has rapidly risen to a great producing country for carriages. Its productions are a type quite original and peculiar to the country. Their execution shows good ability and the best of workmen." Orders were received by Mr. Brewster for quite a number of carriages, as we were advised. Medal awarded.

Blanchard & Brown, of Dayton, Ohio. A medal for wooden wheel spokes made by machinery. Large orders were given for these spokes, as many as 10,000 by one person in London, as we know.

CLASS 7.—*Manufacturing machines and tools.*

The sewing machines were the great attraction in this class. Wheeler & Wilson, I. M. Singer, Wilcox & Gibbs, and A. Howes, of New York, were all awarded prizes. Wheeler & Wilson and A. Howes, medals. The others, honorable mentions. S. A. Bigelow, of Boston, for C. R. Goodwin's machine for sewing boots, shoes, &c. This machine attracted great attention.

C. O. Crosby, Boston. Machines for preparing tape and joint trimmings, crimped rufflings, &c.

Sanford & Mallory, New York. Flax and fibre dressing mill. Medal awarded. A new and very important machine, which attracted great attention.

Alexander Smith, of West Farms, New York, exhibited a new power loom for weaving tufted fabrics. A medal was awarded. In the United States catalogue, prepared by Mr. Holmes, this machine is referred to as follows: "I cannot too highly commend this wonderful invention, and feel here that manufacturers of carpets, and those who use them, will bless the inventor for this great addition to the means of adorning and making comfortable the habitations of men. It has always been admitted that the 'Axminster' is the most elegant and durable of all known carpetings, but, on account of the slow method of producing it by hand, the cost has placed it beyond the reach of all but the most affluent. The most prominent advantages of this invention (which is the result of years of labor and study) are: 1. By mechanical organization the loom automatically inserts, weaves in, cuts off, and completes one whole range of figured tufts across the whole width of the fabric, in less time than is required for the making of a single tuft by the hand loom now and heretofore employed in making the 'Axminster.' 2. The production of this loom is twenty-five yards per day, at a cost for labor not exceeding two per cent. of the cost of production by the hand loom. For the manufacture of rugs and mats it is equally well adapted. 3. By this loom any medallion design can be woven in parts, which, when united, will have the appearance of having been woven in one piece, the peculiar selvage produced in weaving the tufts being such that when sewed the seams are not at all visible. 4. This machine is so arranged that it can be adjusted to the producing fabrics of an inferior quality to what is usually made for 'Axminster,' but superior to velvets and other cut pile fabrics, and at less cost than can be produced by any other known method. In 1851 we introduced to the world Bigelow's loom, for weaving Brussels carpets, and he was awarded the grand council medal. We promised our English friends that the 'Axminster' would come next. Mr. Smith has given to the world the machine that will produce this fine style of carpeting. We learn that Mr. Smith has disposed of his patent, and that he has received enough to render him comfortable hereafter. He deserves well of his country."

P. H. Wemple, of Albany. Machine for boring slats and blinds. Honorable mention. A very valuable machine.

George H. Sanborn, Boston. Rope and cord making machine. This machine dispenses with the common ropewalk, and attracted great attention.

W. D. Richards, Boston. Improved boot and shoe machinery. Very much admired.

Blake Brothers, New Haven, Connecticut. Stone-breaking machine. A very effective machine, (medal awarded,) and will be put into use at once in England.

Sidney Smith, New York. Newspaper addressing machine. Much approved.

Calvert Goddard, New York. Mestizo burring picker. Of very great importance in cleaning wool of burrs, &c.; of great value. Medal "for originality of design, simplicity, and practical utility."

J. C. Todd. Machine for spinning twine for ropes and cord, especially for the Sisal hemp.

Pettee, of Philadelphia. Machine for making paper bags. This is one of the most curious machines introduced. Its capacity is equal to the manufacture of 18,000 perfect paper bags in one hour. It arrived after the juries were discharged, but has attracted great attention.

Edward Conroy, Boston. Cork-cutting machine, producing a gross of corks ready for use for twopence.

UNITED STATES DEPARTMENT.

As the remarks from the *London Times* relate to many of the machines in Class 7, we give the following description of a portion of the United States contributions from that paper, showing the great importance of this exhibition to our country:

"From causes on which there is no necessity now to dwell, our kinsmen across the Atlantic are very imperfectly represented at the international congress. From the southern States, of course, there was nothing to be expected, and if the matter had rested with the Washington government there would not have been a single contribution from the northern States. Private energy and enterprise, of which the chief merit is due to Mr. Holmes, the acting commissioner, have, to some extent, supplied the deficiency, and though we are left almost entirely in the dark as to the state of arts and manufactures in the States, the southeastern corner of the building, at the end of the east transept, contains a numerous and exceedingly interesting collection of various contrivances for simplifying and facilitating the operations of ordinary trades. There is nothing particularly startling or imposing in the display, though occasionally the cleverness with which difficulties are overcome, and some useful and all-important result obtained by the simplest means, approaches almost to an inspiration of genius; but, as nearly all the articles appear to have been selected because they were easy of transport, perhaps we are not wrong in accepting them as the representatives of much more important pieces which would have been sent here under a happier state of things.

"The chief merit of the American washing machine appears to be the ease with which it deals with large, heavy pieces, such as blankets and counterpanes. For hotels, hospitals, and such places it must be very valuable. Conroy's cork-cutters, which stand next, are very neat in their operation. The man in charge simply puts down a square of cork on a small ledge, and as the machine works two fingers are pushed out, which grasp it and fix it on a rotating pin, where it is applied to the edge of a circular knife, revolving horizontally, and in a couple of seconds the square assumes the desired shape and size, and immediately drops into a reservoir beneath to make room for another. A man and a couple of boys can cut 150 gross of corks with this machine in a day. The rope-making machine, which stands next, compresses a ropewalk of some 800 or 900 yards into about eight feet, and spins a 12-strand rope quite as stout, and in much less time, than it could be done by hand. To machinists we would point out a very simple contrivance, which they will find on the wall close by the rope-spinner, for shifting and securing machinery belts, by which, no doubt, many accidents may be prevented. By pulling a cord the belt is moved either on or off the drums, and as the guides move they are secured in their place by a self-acting lock, so that the belt cannot slip either one way or the other. Eckell, of New York, sends one of his new presses, by which 1,000 pounds of cotton may be pressed into eighteen cubic feet, or 800 pounds of hay into a truss of five feet by two feet, with a height of thirty-two inches, in the space of four minutes, and with a less expenditure of labor than by any other press yet invented. They are capable of exerting from 100 to 1,000 tons pressure, and one man working alone can bring 100 tons to bear. The machinery is very simple, and may be applied with equal advantage to presses for extracting oils. Hansbrow's California pump is chiefly distinguished for the ingenious adaptation of the leverage, by which immense power is saved and gained, so that a child might work it. The stream raises on the slightest movement of the handle, and when full power is put on it will throw a stream from a depth of thirty feet to a height of eighty-five feet through fifty feet of hose. Another advantage is that the valves are so arranged as to insure a constant supply of water in the reservoir. A cotton-planter's machine is exhibited close by, which was just coming into use on the southern plantations when the war broke out, and which promised to be a great success. With two men and a horse itwill do the day's work of eight able-bodied "chattels." There is also a corn ad bean planter, which effects a still greater saving of labor. The exhibitor, Mr. Prindle, maintains that it will plant twenty acres of corn per day, either on even or uneven ground, and will do the work of thirty men per day. It requires but one man to work it, and is designed to plant two rows of corn, or three rows of beans, the rows being made at any distance apart. It marks the furrows, drops any desired number of seeds, covers them, and presses the soil over them at any required pressure or depth. It has, too, an adjustable axletree, which enables the guide to work the machine by the last-made track, and to plant rows of any desired width with uniformity.

"In addition to the agricultural machines heretofore noticed, there is a variety of reapers and mowers; a portable steam-boiler, which can be carried anywhere, to supply steam for working a machine, or boiling food for cattle, Prindle's; a ditcher, which will cut a ditch of any depth or width, lift out the earth, and deposit it at any given place; and a self-regulating windmill, which turns its sails to the wind without any trouble to the miller. Batchellor & Sons exhibit samples of steel forks and rakes of such admirable temper that by fair usage alone it is almost impossible to break them. Blake's stone-breaker, which may be applied to crushing minerals of any kind, appears to be a machine of great power. It consists of two immense iron jaws, with graduated faces, one movable and the other fixed. At every revolution of the crank by which the machine is worked the movable jaw advances towards the fixed jaw about a quarter of an inch and returns, its return being aided by a strong spring of India-rubber. If a stone be dropped in between the convergent jaws it is gripped and broken by the first bite, and the fragments fall lower and lower as they become smaller at every revolution of the crank, and are broken by each succeeding bite, until they are small enough to drop out at the bottom. The distance between the two lower ends of the jaws, which determines the ultimate size of the fragments, can be regulated at pleasure. There is a model at work in the department which crushes the hardest pebbles with as as much ease as if they were so many nuts, and a full-sized machine may be seen in the eastern annèxe, though it stands idle for want of power. Lawrence, White & Brothers exhibit a lock-nut and ratchet-washer, which makes every bolt as secure as a rivet. The washer, which is first passed on the bolt to be secured, has a raised rim, on the inner side of which is formed a ratchet, and in a slot forged in the nut which succeeds the washer is fastened a spring of iron, steel, or brass, the latter being preferred, as it may be more easily bent when required, and will not rust, which fastens to the ratchet, and thus prevents the nut from unturning. For securing railway metals the invention is of great value, and will, no doubt, be of service in preventing that large class of accidents which arise from loose rails. Another novelty exhibited here is a boring and spacing machine, which is peculiarly adapted for boring the stiles for blinds or any other wood-work where a series of holes is required to be bored at equal distances apart. There is a long row of spindles and bits, all fixed on one continuous belt, and all advancing by one single movement, and the distances between them may be lengthened or decreased by the simple movements of a lever. The shoe machinery at work here already excites great interest, and on the shilling days many a holiday-making Crispin may be seen gazing in mute astonishment at the marvellous rapidity with which the work is turned out. The blank sole-cutting machine will cut out sixty soles in a minute, and the stitcher will stitch them on, sewing through and through the upper leathers, without the necessity of a welt, at the rate of about fifty seconds for each shoe. The heel-trimming machine is capable of trimming one pair of heels in a minute on the shoe, and the leather-splitting machine reduces the soles to any required thickness.

"The most important piece of machinery exhibited by the Americans is a power-loom for weaving tufted carpets, which may be seen at work in the machinery annèxo. It has already created quite a sensation among the trade, and in a practical point of view is perhaps one of the valuable novelties in the department. The great feature is, that by a single throw of the shuttle it will insert, weave in, cut off, and complete one whole range of figuring tufts across the width of the fabric in less time than is required for the making of a single tuft by the hand-loom. Any medallion design can be woven in parts, which may easily be united so as to have the appearance of being woven in one piece, as the selvage produced is such that when sewed the seams are not visible. The strain on the material is so slight that common worsted or woollen yarns of any quality may be used, so that the cheapest kinds of carpets may be produced by it. The economy of time, labor, and material is so considerable that the machine will probably effect a most important revolution in carpet manufacture.

"Besides these there are various other contrivances of minor importance, but all displaying wonderful ingenuity. Mr. Bates's mechanical apparatus for curing stammering deserves notice, though it is impossible to give any verbal description which would give an adequate idea of its operation. Mr. Ward exhibits a complete series of his signal lanterns, which form perhaps the simplest and most intelligible system of ocean telegraphs yet invented; and we must not forget to mention the sewing-machines, of which half a dozen may be seen hard at work at all hours of the day. There are a few specimens of cereals, and the mineral wealth of the States is represented by a few cabinet specimens, the chief of which are from the Washoe silver mines. In this case are shown two or three samples of quartz, said to be worth £2,000 per ton. The arts of the States are represented by Keutze's fine statue of "America," and a few pictures, which are all worthy of a position where they would attract more attention. Cropsey's 'Autumn on the Hudson,' is a beautiful landscape. The pianos, we understand, have been highly praised by experts, and the most remarkable novelty among them is a piano exhibited by Mr. Hulskamp, in which, by applying an extraordinary tension to the sounding board, and by an arrangement of oblique braces transmitting the vibration, he obtains an unusual volume of sound in a very small space. Mr. Hulskamp also exhibits violins, to which the same principle is applied with the same results. Taking the American exhibition as a whole, there is no department in which the exhibitors will reap more profit from their pains, and perhaps that is as high praise as we can pass upon it.",

The annexed notice was given in the *Times*, after the premiums were announced:

"After the models and gigantic engines in the western annèxe, the very ingenious small hand labor-saving machines in the American court are the most looked after. One of the most curious of these is the machine for milking the four teats of a cow at the same time, and in a manner precisely similar to the action of the calf's mouth upon the teat. In point of time, labor, and cleanliness, the operation of the machine is said to far surpass milking by hand, and the right to use the patent in this country was sold, we believe, for the very large sum of £5,000. A singular addition was afforded in the American department by the trial of this machine for milking cows. Although put forward as a novelty, this ingenious and useful contrivance is no stranger to us. It is, however, not so well known as it deserves to be, and we willingly assist in giving its merits a more extended publicity than they at present possess. The principle of the apparatus is the natural one, namely suction, and is a vast improvement on the rude, slow, and not over-clean operation of the hands. An elastic mouth-piece is adjusted to each of the teats, and is held fast by a small spring. By means of a handle, two valves are made to open and close like the lips of a calf, and a continuous stream of milk obeys this regular motion. The saving of time and labor is considerable, and the mechanical process, based as it is on a physical law, is evidently more pleasant to the cow than is the ordinary manual plan of rough pressure and friction. In this court also is a very ingenious machine for making bags, which turns them out folded, packed, dried, and finished, at the rate of 18,000 in an hour. The cork-cutting, 'planting,' and rope-making machines here are especially worthy of minute examination, and some of the washing machines are quite marvels of inventive skill—almost approaching to the inspiration of genius in the simple means by which their great results are effected. This court is worthy of even a more extended notice than it has yet received from the mass of visitors."

American breech-loading rifle.—The American breech-loading rifle is now, since it gained the prize medal, left out in the military court for public examination. The interest which this weapon is exciting among military visitors, foreigners as well as English, is very great, and seems to be getting greater every day. In the military court the breech apparatus is shown, fitted to the Enfield, Whitworth, cavalry and other rifles, and its incontestable superiority over the European inventions of the same kind can be seen the instant the weapons are compared with English, French, or German breech-loaders. It is, in truth, difficult to overrate the value, and to us the importance, of this most simple and efficient addition to our rifles, and more especially when the results claimed for it in theory can now, we should think, be substantiated by the terrible practice which some of the federals must have lately had with it. Long before it was awarded the prize medal, we ventured to express our opinion, that this was "the coming weapon" for modern war, and for equalizing in a great measure the overwhelming superiority which the rifled cannon now has over small-arms of all kinds. Since its appearance in the exhibition, the attention of foreign officers has been more particularly drawn to it, and the result is, that one great continental power is in treaty for the supply of 50,000 as soon as they can be made.

MACHINERY IN THE INTERNATIONAL EXHIBITION.

A century ago it was asserted that a French washerwoman had the manners of an English dutchess. Be this as it may, a veritable dutchess might have been seen a few days since in the western annèxe of the international exhibition, if not washing, at least turning with her own hands, "Ives's Universal Clothes Wringer," a machine calculated to mitigate the horrors of the washing-day. Her Grace the Dutchess of Brabant seems to be highly delighted with its performance, for we learn from the agents (Messrs. George H. Sanborn and Co., United States department) that she has left an order for a number of their machines. The wringer is simplicity itself, consisting only of two vulcanized India-rubber rollers, which are easily adjusted by screws to suit any thickness of material, from a piece of lace to a piece of carpeting. It will not injure the most delicate fabrics. The yielding elastic surfaces of the rollers accommodate themselves to seams and buttons, and as both cylinders turn together, they avoid all danger of tearing the clothes. The machine is so small that it is frequently mistaken for a model, although in reality it is quite capable of doing the work of a large establishment. It is certainly out of sight the cheapest and most interesting domestic machine in the building. Adjoining this machine, in the Belgian department of the western annèxe, Mr. Sanborn exhibits a collection of rope-making machinery, which is destined to work a revolution in that important branch of manufacture. It consists of four machines—a dressing, a spinning, a laying, and a rope-making machine, capable of making ropes from any fibrous material, but especially adapted to the manufacture of Manilla rope. Two men, with the dressing-machine, can pass through from sixteen to twenty bales of Manilla hemp per day, thoroughly removing the dust and giving a peculiar brightness to the material, without producing tow or injuring the fibre. The rope machine forms the strand and lays the rope in one operation. It is capable of being run at a high rate of speed without being liable to get out of order; and, owing to its simplicity, it requires but little attention; two boys can attend to six machines. It is so expeditious that the exhibitor cannot show it in operation many minutes at a time, as its capacity for converting hemp into rope is such that in its present cramped quarters there would be a difficulty in supplying it with raw material if kept constantly at work. But, give it a fair chance, and then we would have no hesitation in advising any one really in want of rope to go to Sanborn. The same gentleman exhibits in the American department a gas regulator, which, he says, "operates quickly and surely, cannot be obstructed by coal tar, has no friction, and will remain in order for an unlimited period; gives a beautiful light, consumes all the gas under a low pressure, leaving the atmosphere in the room in a pure, healthy condition. The saving of gas by its use is from fifteen to thirty per cent." As we have not seen the regulator in operation, we must leave those interested or skeptical in the hands of Mr. Sanborn. For our own part we should consider it a treasure if it came within fifty per cent. of his glowing description. The half of "an unlimited period" would be as long as we should require anything to remain in good order.

Steam steering apparatus, F. E. Sickles, New York.

This is no model, but the actual machine that was twelve months in use in the steamship "Augusta," a vessel two hundred feet in length, with a seven and a half feet rudder. The Augusta traded between the southern States and Havana, and her crew were principally negroes, who, though often indifferent sailors, steered the ship with ease; and it speaks volumes in favor of the simplicity and strength of the apparatus that it did not get out of order under such circumstances. The steersman operates upon a wheel in the ordinary manner; but this wheel, instead of working the rudder, merely works the valves of two small steam cylinders. Whichever way the steersman turns his wheel, the engine works in that direction, and stops whenever and wherever he stops turning. The power is communicated through a powerful friction wheel, the amount of friction on which can be regulated at pleasure. Hence, when a sea strikes the rudder, the friction wheel prevents the suddenness of the jar from injuring the machinery. Looking at the daily increasing size of the ships being built, both for naval and mercantile purposes, this becomes an invention of more than ordinary importance; and Mr. Sickles's apparatus has attracted the favorable notice of Napier and other influential ship-builders. The Great Eastern and other ships are spoken of as likely to be supplied with it before long. It is quite possible that the great ship would not have suffered so much in the gale of last September if she had been provided with an efficient steering apparatus. The admiralty also have looked at it, and, it is said, expressed themselves favorable towards it. But Mr. Sickles need not build extravagantly on an encouraging look or opinion from any one connected with the admiralty. He has only one chance of getting his invention, whatever be its merits, introduced into the British navy; that is, the loss of the Warrior or some valuable ship through the inefficiency of the steering gear. We should be sorry, however, to witness such a catastrophe; and as we have no desire to see such a price paid for improvements, we shall endeavor to be contented without the steering gear of Mr. Sickles, or any other man, in our ships-of-war, until the more enterprising owners of our mercantile marine solve the problem, and establish by actual practice the value and importance of steam-steering apparatus.

CLASS 8.—*Machinery in general.*

This was the most important class in the exhibition, and shows a greater advance since 1851 than any other class. The jury had thirty-three meetings, and their honors were awarded for such reasons as these: "Good workmanship, good arrangement, practical utility, practical success." The United States exhibited twenty-eight machines and received twenty-eight prizes—a testimonial the most honorable, when given under the tests above referred to; and no other nation approximated to a like number of prizes for their exhibitions in proportion to the number shown.

Prize medals were awarded to John F. Allen, New York, as inventor of the slide-valves, valve-gear, and expansive-gear on Allen's horizontal condensing engines, exhibited by Charles T. Porter.—W. D. Andrews, New York, centrifugal pump and engines—good design.—Blake Brothers, New Haven, Connecticut, stone-breaking machine—simplicity and practical utility.—Edward Conroy, Boston, Massachusetts, cork-cutting machine—originality of design, good workmanship, and practical success.—Captain John Ericsson, New York, caloric hot-air engine.—A. G. Gibson, ———, improved carriage coupling—originality of design and probable utility.—John C. Gore, Jamaica Plains, Massachusetts, belt-shifter—originality of design and probable utility.—C. L. Goddard, New York, mestizo-burring picker—originality of design, simplicity, cheapness and practical utility.—T. Hansborow, California, pumps—good arrangement and good workmanship. (Rights sold in England.)—Kershaw & Colvin, Philadelphia, cow-milking machine—good design, practical utility and moderate price. (Rights sold for a large sum.)—Lee & Larned, New York, steam fire-engines—ingenuity of design and good workmanship.—Charles Near, New York, self-registering dynamometer—good arrangement and practical utility.—D. Parker, Canterbury, New Hampshire, washing machine—practical utility and success.—Brothers Pesant, Ericsson's hot-air engine—good design and practical utility.—Charles T. Porter, Auburn, New York, invention of governors, execution of governors and engines.—C. B. Richards, Hartford, Connecticut, as inventor of the indicator, exhibited by Charles T. Porter.—J. Ross, New York, conical burrstone mills—good arrangement and practical success.—Henry Steele, Jersey City, steam-pump—good design and practical success.—S. Willcox, jr., Rhode Island—good arrangement and practical utility of hot-air engine, of which he is the inventor.—R. H. Worthington, New York, duplex steam-pump—good arrangement and practical success, especially in fire-engines. Total, twenty medals.

Honorable mentions.—C. H. Dennison, Wilcox's hot-air engine.—John Dickenson, diamond mill-dress.—J. J. Eckell, New York, combination press and compress for cotton, hay, &c.—A. M. Foote, New York, lock umbrella stand.—H. H. Parker, ratchet drill.—Walcott, button-hole cutters.—Walker & Epperstein, portable mineral and soda-water apparatus.—Wentworth & Jervis, Burlington, Iowa, windmill water-elevator and register of power.—Total, eight honorable mentions.

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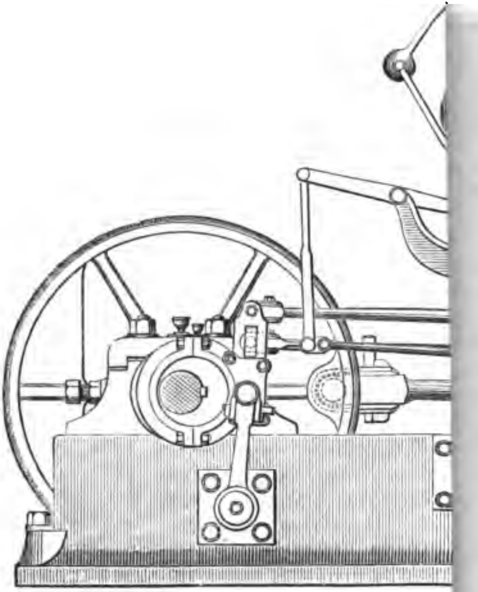

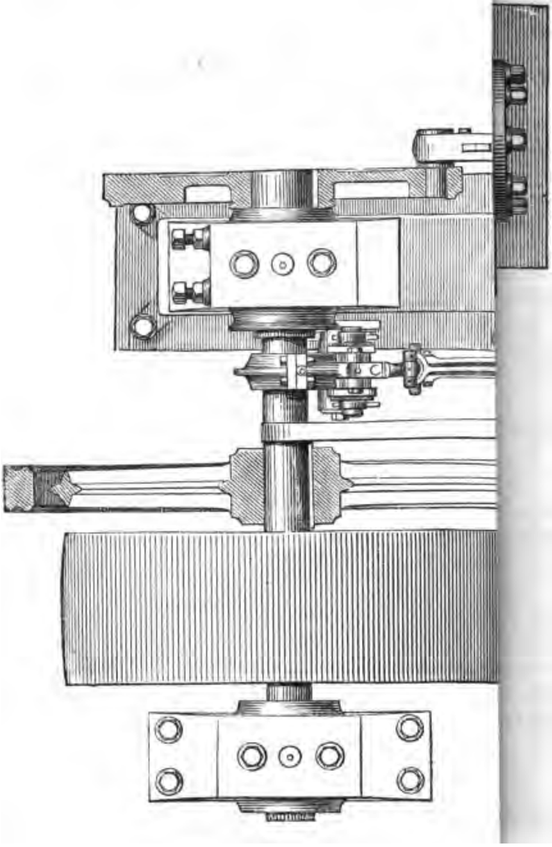

26 A.—*The Allen horizontal and non-condensing engine, exhibited by C. T. Porter, of Auburn, N. Y., at the International Exhibition, London,* 1862.

This engine, exhibited in London, at the exhibition, and selected to drive a portion of the machinery in the building in operation, was awarded a medal, and is thus alluded to in the record of the great exhibition:

United States.—By far the most interesting and important engine to the really instructed and mechanical engineer in the whole exhibition is, we hesitate not to affirm, that exhibited by Charles T. Porter, of New York, and named by him—after the inventor, who is said to be a working man in New York—*the Allen engine.* This little engine has no doubt been passed by without regard by tens of thousands whose attention has been fixed by huge and splendidly finished engines not possessing a tithe of its merit. The engine is represented in elevation and plan in the report. It is a horizontal non-condensing engine of only eight-inch diameter cylinders, and twenty-four inches stroke. The form of the bed, which only weighs thirteen hundred weight, is peculiar, and, like some other parts of the engine, will not be considered graceful by most eyes. A reason, however, can be rendered by the maker for the form he has given to every part; and admitting, as a principle, that in machinery the most suitable is always the handsomest form, we cannot find fault with the old slewed form of the bed, nor with those of some of its first moving parts. The workmanship also will offend the fastidious eye of many English mechanics, for, although respectable, it is not equal to English work generally; but our exhibitor informs us that it was made and shipped in New York in such haste, to be in time for exhibition, that its parts were never even operated together until the engine was being erected where it now stands, in the west annèxe, and where it runs at the rapid speed of one hundred and fifty revolutions per minute, and gives motion to a large proportion of the weaving machinery there exhibited. It belongs to the class of variable, expansion engines, and its chief peculiarities are in the construction of the valves and valve-gear, and in that of the governor, and the connexion maintained between them.

The report then gives a detailed account of the construction of the engine, of the governor invented by Mr. Porter, and of an indicator by C. B. Richards, of Hartford, Connecticut, and patented by Mr. Porter.

Medals were awarded to each of these. We allude to this engine at this time, as it was, in the language of the report, "the most interesting and important engine in the whole exhibition." This is honor sufficient, when it is recollected that the machinery department of the exhibition was the most important department of the whole, and in which England showed more advance than the other countries. We have no doubt that Mr. Porter, who understands well his business, will lay a foundation for supplying the markets of the old world as Mr. McCormick did, in 1851, by the introduction of his American reaper.

The report in full in this class is given in the appendix, and will be found of great interest.

CLASS 9.—*Agricultural and Horticultural Implements.*

This was a very interresting department, and showed great improvement since 1851. The report upon this division, by Professor John Wilson, of Edinburg, is the best we have seen as compared with the exhibition of 1851; he says, "although many new inventions are not shown, in almost every department of machinery as well as implements, this improvement is shown." Iron has been substituted for wood; light wrought-iron now takes the place of thicker and heavier cast metal; strength is given where the strain or wear and tear is greatest, and where it is small, all unnecessary weight is saved. Friction is materially lessened, so that the deplorable difference so often met with, between the *nominal power* and the *practical working power* of some of the older machines, is now never heard of. (We noticed, in 1851, the unnecessary weight of the implements and machinery, and suggested to our English friends, that a great improvement might be secured by adopting the mode of construction of many of our American machines and implements. We are pleased to see that it has been done, to the great advantage, both of the manufacturer and the persons who have the articles in use. This improvement was manifest in many of the classes.)

Reaping Machines and Steam Ploughs.

Professor Wilson justly claims that these have been greatly improved. It cannot be doubted, however, that Cyrus H. McCormick, of Chicago, United States, is to all intents and purposes entitled to the credit of *introducing a practical successful working reaper* into Great Britain, and upon the continent in 1851, as his *great gold medal,* awarded him at that exhibition, clearly shows.

Professor Wilson, in his very interesting report on the reaper, an abstract of which is given, arrives at the same conclusion, and this is now admitted by all who have investigated the subject. There have been improvements made in the reaper, adapting it to the different work required, the state of the crops, the manner in which they prepare their grain in England, as well as other matters which influence the construction in the several countries where they are now used; but the foundation of almost every reaper is based upon the American reapers, and in some of the countries on the continent reapers are to be seen made precisely after the pattern of ours, and exhibited as their own inventions.

Professor Wilson states "that cultivation by steam-power is destined to supersede that by horse-power to an enormous extent," and this cannot be doubted by those who have witnessed the successful trials in the fields during the past two years and the present year. Fowler's steam plough and cultivator, and Howard's steam plough, seem at present the only real successful ones that have been introduced. We give extracts from the report relative to these two, as to their construction and mode of operation, with illustrations. We also give a report upon a trial between these two machines at the Yorkshire show in August, made by Professor John C. Morton, one of the leading minds in Great Britain. We were present at this trial, and were greatly gratified at what we witnessed. As Professor Morton's report is so full in every respect, we shall forbear any further remarks.

As the question has often been asked since my return, whether these machines as they are now used in England could be profitably introduced into this country, I have invariably answered, that I do not think they could be. I ascertained the expense of their operating, and this will be given in this report, and I think the expenses are at least one-third greater than ploughing as ordinarily done by horse-power in this country. But I do not despair of steam ploughing being introduced here, but it must be with machinery far less complicated and expensive. I doubt not that we shall, ere long, be furnished with a steam apparatus, which, upon large farms, will supersede the use of horse-power to a very great extent.

The only new plough specially noticed by Professor Wilson is Hornsby's, introduced in 1857; but as ploughs of this description are not used in this country, it is not important to specify particularly the manner of its manufacture.

Harrows, rollers, and cultivators were exhibited, as well as drills, sowing machines, horseshoes, portable engines, &c. In many of these, these alterations and improvements, to some extent, have been made. The show of *portable* engines for farm purposes was very extensive and exceedingly well got up, and I think, as a whole, far superior to 1851.

Reaping machines.

Since 1851, ten thousand machines, it is estimated, have been manufactured in England, and most of them put in use in Great Britain. Previous to giving the reports on steam ploughs and reapers, I will notice the implements shown from the United States.

In the United States department the following prizes were awarded, being, I believe, all the implements of our country before the jurors; others were received after the jurors had completed their labors, which are referred to in this connexion:

Cyrus H. McCormick's reaper, which in the exhibition of 1851 received the gold medal, was exhibited again with a self-raking attachment, and attracted as much attention as did the original reaper. It was put in operation under an order for trial with other reapers, by the Imperial Société d'Agriculture in France. I was present at the trial, and the complete success of the reaper was admitted by all present. The jurors appointed to the trial made their report to the society. The prize to the McCormick machine with its *new self-raking* attachment was awarded.

It was in operation in the field in England and Scotland, and continued its work to the close of harvest, and gave universal satisfaction. A *prize medal* was awarded by the jury.

It is gratifying to report the success of Mr. McCormick in 1851, and again in 1862; this last improvement being the very thing desired in Great Britain and on the continent.

The admirable manner in which the self-raker leaves the grain ready for the binder insures its introduction everywhere. The number or reapers distributed in Great Britain, and on the continent, and in the British possessions, by Burgess and Key, of London, the owners of the patent of the original McCormick reaper, amount to thousands; and whenever a reaper shall hereafter be introduced, the name of Cyrus H. McCormick will be remembered as having first given to the world a successful practical reaping machine. We are gratified in recording the testimonies so justly due to him for his energy and enterprise in having successfully overcome every obstacle thrown in his way in 1851, and again in 1862, having presented an addition to his original reaper, which was demanded, and which will add to his fame so fully established in 1851.

The success of this reaper in our country is well known; at least 45,000 machines have been in operation and the world now, in addition, witnesses upon the harvest field of every nation this same valuable machine in operation.

Walter A. Wood, Hoosick Falls, New York, combined reaper and mower; prize medal awarded.

Mr. Wood had on exhibition a self-raking reaper, combined reaper and mower and grass-mowing machine a larger number of his own inventions and manufacture than any other exhibitor in that class. Of these several machines Mr. Wood has manufactured and sold in the United States and Europe during the last eight years, not less than 12,000. In 1858 Mr. Wood commenced a series of experiments to test the practicability of constructing a mowing machine that would be light, and of easy draught, and at the same time strong and durable. He succeeded in making a mower, which, in all essential points of excellence, simplicity of construction, closeness of cutting, light draught, portability, and durability, Mr. Wood's claims give it a superiority over other machines. The weight is reduced from 800 to 500 pounds.

In 1861 the mower received the prize of the Royal Agricultural Society of England, at Leeds.

At the trial of the Yorkshire Agricultural Society on the 5th of August, it received, after a very animated contest, the first prize; and it was decided there, as stated in one of the reports on the exhibition, "that, either for lightness, handiness, or perfection of execution, Wood's machine fairly beat all the others." Being present at the trial, I entirely concur in the award that was made. In France, in 1860, this mower received the grand gold medal of honor, as the best machine on trial; also a gold medal and 1,000 francs as the best foreign machine.

Mr. Wood manufactures his machines in this State, and has an agency in London for Great Britain and Europe, where all his machines can be had.

Russell & Tremain, Fayetteville, New York, a new reaping and mowing machine. This machine has an entirely new and simple device for operating the knives of harvesting machines without any gearing, which consists of a series of rollers placed on the inner face of the driving wheel, which, when the wheel revolves, run on the flange of a screw or worm attached to the crank shaft, the passage of each roller causing one revolution of the screw and crank. An honorable mention awarded. Several of these machines were sold in England and placed at work in the harvest fields, and gave good satisfaction. I attended a trial of one of them with some Spanish gentlemen, and it performed its work well, and to the satisfaction of those present, and we believe the machine was purchased for Spain.

Kirby's patent combined mower and reaper, and Kirby's single mower, exhibited by Kirby & Osborn, Auburn, New York, an honorable mention awarded. These machines are well known in this country, and are among the most popular machines in market. The manufacturers say that they have made and sold in the United States, during the past four years, about 12,000 machines, and the demand has exceeded their ability to supply. The peculiar features are, an independent action between the driving wheel and finger-bar, moving so that they may each follow their own ground, and each play up and down independently of the other. The driver's seat is so pivoted over the driving wheel, that the weight of the driver balances the weight of the frame and the downward pressure on the horses' necks, and throws the whole upon the driving wheel; thus adding to the power of the wheel, and materially lightening the draught of the machine. It has an adjusting overhanging reel, used either in mowing or reaping, or not, as desired, and a revolving track clearer which spreads the grass evenly. By means of a lever at the side of the driver, either or both ends of the cutting away as may be lifted to pass obstructions, or move from field to field. The machines are light and strong, being made mostly of iron and steel, are very durable, and not liable to get out of order.

Mr. Osborn had several machines with him; they were tried in the field in different parts of the kingdom; gave, I believe, much satisfaction, and all of them were sold to farmers.

Douglas Axe Company, Massachusetts, showed a case of highly finished American hardware, mainly axes and wood-working tools, and were awarded a medal.

Blanchard & Brown, Dayton, Ohio, a new and valuable invention for planting cotton seed. A man with a horse can plant from eight to ten acres a day, and the work better performed than by hand. Medal awarded.

Levi A. Beardsley, South Edmonston, New York, hay and earth elevator. Honorable mention.

Robert Brice, Albany, New York, exhibited a churn and mop. Honorable mention awarded to the mop.

D. R. Prindle, East Bethany, New York, model corn and bean planter and agricultural boiler. Excellent inventions, and worthy the patronage of those desiring implements of this kind.

The American cow milker, Colvin & Kershaw, Philadelphia, attended to also in Class 8, attracted as much attention as any other article of a practical nature in the exhibition. The patent for this invention was sold to a company at Birmingham for £5,000. As we shall give an article from the London Times on the American articles, in which the construction of the milker and its operation are fully described, we omit it here.

After our articles had been passed upon by the jurors, who awarded to exhibitors from the United States 88 prizes to 95 exhibitors, our section of the exhibition was visited by all who were in attendance. The London Times gave an account of a part of our department. We give this description from the Times, as showing the change of feeling in relation to the United States exhibition after the juries had passed upon our articles, and awarded such a large share of prizes—more, in proportion, than had been awarded to any other country there represented. It is due to our exhibitors, also, who had the courage to enter this great field of competition, and who so successfully carried off the prizes, and sustained again the well-earned reputation which our country had achieved in 1851.

Ormond Coe, of Wisconsin, exhibited a cultivating harrow, which was a most valuable machine and attracted much attention, and was evidently among the new inventions worthy of special commendation.

Batchellor & Sons, Washington, Vermont, a case of implements, hay and manure forks, which are highly prized in England, where an agency is established for their sale. A medal awarded.

James Dane & Co., Springfield, Ohio, steel ploughs. A medal awarded, and the ploughs were soon disposed of.

Emery's cotton gin was received after the juries were discharged. The commissioners, however, very kindly allowed it to be put up, and it was exhibited in working order to the great gratification of those interested in the cotton trade.

Improved cotton gin.—In the western passage of the western annèxe, opposite the great American carpet loom, a neat and very effective cotton gin is exhibited by Messrs. Emery Brothers, of Albany, New York. The great advantage of the improved gin is, that it adapts itself to the various conditions of the cotton treated; that it can be readily adapted for long or short staples, and that a larger quantity of cleaner cotton is got out in a given time. The inventor truly remarks that "whilst this gin has all the material value in its parts which are to be found in others of the most approved kinds, its own peculiar construction gives to it its greatest value." The first in importance and value is the device introduced in the saw chamber into which the seed cotton is placed to be ginned. It consists of a light wood shaft, suspended by small journals at each end of the chamber or hopper, and about midway of the space occupied by the cotton roll or seed cotton. This wood shaft is thickly studded with smooth-pointed wood pins, set radially all around its surface, these pins reaching nearly to the saws of the gin. The journals at the ends of the shaft have sufficient orbital freedom to admit the shaft always to occupy the centre of the cotton roll, and accommodate itself to the varying density or quantity of seed cotton, as the whole mass forms upon and is supported by the shaft, and, consequently, is uniformly rolled in all parts, presenting the seed cotton to the action of the gin always in the best possible condition, and without impinging upon the saws or the ribs of the gin, thereby preventing any choking, clogging, bridging, napping, abrasion, or injury to the staple. This shaft, and the seed cotton upon it, move together without any slipping, thereby presenting all parts of the cotton roll uniformly to the saws themselves, whether fast or slow, and maintaining the lightest imaginable condition of the seed cotton in the roll at all times. The machine may thus be worked at almost any velocity, and may be fed and attended by any person, old or young, weak or strong. The brush cylinder is made with a sheet metal covering, with its heads concave, and with stationary flanges fixed to the inside of the gin around the brush heads. By this means danger from friction, heating of bearings, and consequent firing is rendered impossible. For short staple the saws are placed about $\frac{7}{8}$ inch apart, and for long staple each alternate saw is removed and replaced by a steel disk, and the velocity of the saws is reduced. Attached to this gin is an entirely new condenser and cleaner. It consists of a large revolving wire gauze cylinder placed at the discharging side of the gin, and partially enclosed within a wind trunk, which conducts the ginned cotton with the wind blast from the gin upon it. The wind, together with all dust and sand, passing freely through the gauze cylinder, and escaping at the ends and lower side, while the cleaned cotton is formed into a thick layer, and delivered between rollers for the purpose, in a condensed and clean condition; thus doing away with all danger from fire, and dispensing with the necessity of the large lint room; in fact, this last addition to the gin enables it to be operated as well in the open field as the corn or wheat threshing machine. It also enables the machines to be taken from plantation to plantation, and doing the work on the same, thus avoiding the hauling of the unginned cotton to the gin, as is usually done; also saves the cotton seed upon the plantation, where it is always found to be the most valuable fertilizer, and which, if removed from the land, will soon impoverish the soil beyond redemption for growing cotton. It may not be amiss here to state that the success of the cotton culture in the United States dates back only to the introduction of the saw cotton gin, since which it has increased annually in an almost arithmetical progression, until the production exceeds 4,000,000 bales, of 500 pounds each, annually, and to the present time the same character of gin continues to be universally used for the preparation of every pound of this vast amount. As to quality and cleanliness, it is unnecessary to say that the United States cotton has hitherto exceeded that from any quarter of the globe. As this is the only gin of this character in the exhibition, and but recently brought out and put into operation, it should command the closest examination by all who are interested in the many enterprises for increasing the supply of the staple in various new and distant fields. As their future success must depend more upon its cheap production and marketable condition than upon the present fabulous prices obtained for the article, (for competition is as sure to follow, sooner or later, as the sun to rise and set,) again we would say the machine is well worthy the attention of those about to embark in the growing of cotton in our colonies and Indian empire, and we do not doubt that it will be extensively patronized by them.

Professor John C. Morton's official report of the trial of steam-ploughs, at York, England, August, 1862.

The field set apart for the exhibition of steam-ploughs and cultivators, though perfectly well fitted for showing the machines at work, being large enough for three or four trials of all the different implements on the ground, and providing a furrow upwards of 300 yards in length, is yet very ill adapted for the illustration of steam cultivation. It is, for the most part, of an extreme light soil, and thus presents none of that difficulty as to either the labor or the quality of horse cultivation, which proves on stiffer land the advantages of applying steam power to the cultivator or the plough. And, besides that, there extends across the field a narrow band of stiff clay which requires a double or triple power to cross it, so that the engines employed had to be worked throughout the furrow at much higher pressure than was needed, except at particular moments. A spectator had thus no opportunity given to him of ascertaining aright either the advantage or the cheapness of the cultivation of the land by steam. He had, however, ample opportunity of seeing how the machines of Fowler & Howard were worked; and his own experience in cultivation elsewhere might enable him to judge of the advantages they possess on the stiff soils of the country.

It is, indeed, impossible to overestimate the advantage of steam cultivation on stiff clay lands. They are dependent on proper cultivation even more than on the application of manures for their fertility, for they are already full of the food which plants require if we could only get it. To this end, they need to be broken up and exposed throughout their depth to the free access of air and weather. But there are comparatively few days during the year in our climate when this can be done by horse-power, for they are generally either baked by the sun, so that the horses cannot pull the plough or the cultivator through them, or they are so softened by the rain that the trampling and sliding of the team or tool will do more to close the land than open it. We want a power which shall make a full use of the short intervals when such land is in proper condition for tillage operations, and which shall at the same time avoid the evil of poaching the land above and hardening it below, which in the horse cultivation of clays is too often seen. A four-horse team and plough weigh more than 40 cwt., and all this goes trampling and sliding from end to end of the field that is being ploughed, over every ten or twelve inches of its width; and thus, of course, a floor is formed beneath the soil, hindering drainage, which is the greatest improvement of which clay lands are capable. We want a tool not weighing more than four or five cwt. for every foot in width worked by it, carried on wheels, so as not to close the surface over which it travels, and driven by a power which shall not press upon the land that is being worked.

All this we have in the steam-drawn ploughs and cultivators that were seen at work yesterday. The ploughs employed weigh not more than five to seven cwt. per foot of width, and both are carried at wide intervals, thus traversing the field but once to every four or six feet width. The engines driving them either travel on the headland, as in Fowler's apparatus, or they may stand altogether out of the field, as in Howard's case. In both cases the tools can be drawn with wonderful effect through sun-baked clay, which horses could not touch; and (supposing the land to be fit for horse work) in both cases the mischief done by drawing a heavy tool across the land that wants loosening and cultivating is reduced to a minimum; while for speed of work in order to the full use of the short times, when clays are fit for cultivation, the advantages of steam-power are in both cases beyond a question.

We saw the speed of steam cultivation well illustrated yesterday, and the superior quality of steam cultivation was sufficiently well shown, for the patches of clay land in the field were ploughed and cultivated, and the lighter soil was thrown about, as no horse-power could have done it.

The cost of the work cannot be illustrated by a few hours' trial; but there is now experience, both of Fowler's and Howard's apparatus, over years enough and acreage enough, to prove that their better cultivation is generally attained at much less cost than is incurred in horse labor. I have walked over many thousands of acres cultivated by both, and having been allowed to inquire particularly into the history of steam cultivation, over many scores of farms in all parts of the country, I am able to speak with some confidence on this point. It will be found that, taking every particular of expense into the account, wages, full breakages, tear and wear, and interest of capital, good ploughing may be done by steam for from eight to ten shillings per acre, and one way grubbing for from five shillings to eight shillings per acre, which under horse labor would have cost from twelve shillings to eighteen shillings, and six shillings to ten shillings, respectively, for much inferior work.

There is, I believe, no one, unless he be interested in the success of one or the other of the rival firms engaged in the manufacture of steam ploughs and cultivators, who will not greatly prefer thus confidently to report the unquestionable success of steam cultivating generally, rather than venture to compare the rival methods of it after a few hours' trial and inspection. Having, however, undertaken the duty of drawing up such a comparison, I have now to relate the performance of the machinery that was exhibited at work.

On one side of the field an ordinary Clayton & Shuttleworth's single cylinder eight-horse power movable threshing engine drove by strap a movable anchor furnished with clip drum, by which the draught rope extending from it around another movable anchor on the further headland, was drawn to and fro, and with it Fowler's ordinary four-furrow balance plough. The engine was a single nine-inch cylinder, with twelve-inch stroke, and it was working at a pressure probably upwards of seventy pounds, the gauge standing occasionally as high as eighty pounds, though I was assured it was indicating beyond the truth, being out of order. The engine was making about one hundred and thirty revolutions during the trial. The ploughing, as I measured it, was hardly five inches deep; the furrow was 330 yards long; the plough made close on thirteen journeys along this furrow within the hour, losing six and a half minutes on the headlands, and one and a half minute during one stoppage; exactly one acre (not half a perch more) was accomplished within the hour. The men employed were: engine man, two anchor men, one ploughman, and two porter lads. The rope was well carried on twelve rope porters, which stood rather less than fifty yards apart.

The central plot, allotted to Messrs. Howard, was partly ploughed and partly cultivated. In their new three-furrow balance plough, the two frames carrying the ploughs balance one another, not as in Fowler's machine, by being both part of one rigid frame-work, thus balancing over the axle of the wheels which carries it, but by each hinging on separately to a central frame-work, which runs on three wheels; and each, as in its turn it drops into its work, lifts the other off the ground, the chain which connects the two passing over cams or eccentrics, thus giving to each, as its turn comes to work, an advantage in weight over the other.

The plough is drawn to and fro by a Clayton & Shuttleworth's ordinary ten-horse-power engine, with seven-inch double cylinders and twelve-inch stroke. It was working up to seventy pounds pressure, and making from 125 to 130 revolutions per minute. It drives a double windlass, each barrel being geared in to work alternately, while the other, which is then paying out the slack rope, drags upon a wooden stud, on which it drops when out of gear. The patent snatch-block arrangement, by which the drum is hindered from paying out rope any faster than its neighbor pulls it in, was also in operation; the advantage of it being that the slack rope behind the plough is kept at sufficient tightness to prevent its dragging on the ground. This rope runs all round the part of the plot which remains unworked, and was carried on eight high rope porters on wheels and nine lower ones, and on eight wheeled lower porters, along the furrow on which the implement is at work. These latter porters are furnished with an ingenious leverage, enabling the porter lads very easily to shift them and replace them. The men employed here were: engine man and windlass man, two anchor men to shift the pulleys at either end of the furrow, as it encroached on the unworked part of the land, one ploughman, and two rope porters. The work accomplished with the plough was as nearly as possible (not half a perch less) three roods within the hour; and I estimated it at fully five inches deep. The ground was here, upon the whole, more difficult than where Fowler's plough was working, the clay patch being wider here than there. The work was accomplished in fourteen journeys of the three-furrow plough, along a furrow 314 yards long; seven minutes were lost on the headlands, and one minute was lost during a stoppage.

Howard's three-tined cultivator, furnished with teeth projecting both ways, so as to come into operation on both the forward and backward journey without turning at the land's end, was also tried here. At first it was set too deep for the power of the engine when on the clay; and as it is not provided with any means by which the man can at once release it in any degree from its work, when once it stops, there it must remain until the engine acquires power to pull it through. Thus, during the first half hour it made only four journeys, cultivating very deeply and thoroughly, rather less than a quarter of an acre in that time. During the next half hour of its trial, when it was working at a less depth, it made seven journeys, accomplishing close on half an acre in the time, or at the rate of one acre per hour.

The outer plot was set apart for Fowler's fourteen-horse-power engine, with double cylinder of seven and three-fourths inches, with twelve-inch stroke, working at about seventy-five pounds per inch, and making 150, often 180, revolutions per minute. The speed of its work was indeed such, that when in the lighter parts of the field the furrow slices were thrown from the mould-boards, or digging breasts fully thirty inches on one side, making quite a wave of earth which was tossed off them in a thoroughly smashed condition—tossed, however, into heaps which would require rather a laborious levelling during the next tillage operation. There are here one engine man, one ploughman, one anchor man, and two porter lads employed. The four-furrow balance plough, with the digging breasts, make about nine and a half journeys along a furrow 318 yards long, losing only two and a half minutes on the headlands during half an hour, ploughing nearly six inches deep, at the rate of one acre, one rood, five and a half perches per hour.

The seven-inch grubber was then tried, only six tines, however, being in operation; thus accomplishing a width of more than five and a half feet at a mite. It made eight and a half journeys in the half hour, doing very thorough work, at the rate of about one acre, three roods, twenty-four perches per hour. The advantage of great rate of speed was shown in the complete wreck and smash of the earth that was moved. It was, however, here also, though in a less degree, occasionally left too irregularly for easy treatment afterwards with the harrows; and a less speed would, on this account, have been better. Howard's cultivator, driven not nearly so fast, was found, on examination, to have moved as much earth per superficial yard; but it was merely moved, not tossed about, and it would need, therefore, a crossing with the cultivator before the ordinary harrows would take hold of it, whereas Fowler's work would no doubt have been laid hold of by the harrows at once; though, as already said, sometimes too much laid in heaps.

In order still further to compare the work done by the several cultivators and ploughs upon the ground, it was resolved to attempt an estimate of the earth moved per acre in the several cases. To this end, a frame four feet by four feet six inches—enclosing, therefore, two square yards of surface—was provided; and all the earth within this frame which was dropped here and there on the several plots was carefully collected and weighed. The following tables represent the work accomplished by the several machines, as thus ascertained:

1. *Fowler's (so-called) eight-horse-power engine, with movable anchor, carrying clip drum and a furrow balance plough.*

Laborers employed, four men and two boys.
Estimated depth of work, barely five inches.
Quantity ploughed per hour, one acre.
Weight of earth moved per square yard, ascertained in four instances:

	Stones.	Lbs.
No. 1	35	3
No. 2	29	0
No. 3	31	2
No. 4	28	10
Average weight of earth moved per yard	31	0
Weight of earth moved per acre	938	tons.
Weight of earth moved per hour by the so-called eight-horse-power engine, four men and two lads	938	tons.

2. *Howard's (so-called) ten-horse-power engine, with windlass and three-furrow balance plough.*

Laborers employed, five men and two lads.
Estimated depth of work, fully five inches.
Quantity ploughed per hour, three roods.
Weight of earth moved per square yard, ascertained in four instances:

	Stones.	Lbs.
No. 1	26	10
No. 2	30	10
No. 3	35	3
No. 4	30	7
Average weight of earth moved per yard	30	11
Weight of earth moved per acre	932	tons.
Weight of earth moved per hour by the so-called ten-horse-power engine, five men and two boys	774	tons.

3. *Fowler's (so-called) fourteen-horse-power engine, four-furrow balance plough, and digging breast.*

Laborers employed, three men and two lads.
Estimated depth of work, close on six inches.
Quantity ploughed per hour, one acre, one rood, five and one-half perches.
Weight of earth moved per square yard, ascertained in three instances:

	Stones.	Lbs.
No. 1	31	3
No. 2	34	0
No. 3	35	3
Average weight of earth moved per yard	34	2
Weight of earth moved per acre	1, 002	tons.
Weight of earth moved per hour by the so-called fourteen-horse-power engine, three men and two lads	1, 280	tons.

4. *Howard's ten-horse-power engine, double windlass, and three-tined cultivator.*

Laborers employed, five men and two boys.

Weight of earth moved per yard, ascertained first when going deeply and doing half an acre per hour, thirty-three stones, equal to 998 tons per acre, or about 500 tons per hour. In this case, however, as already stated, the stoppages were frequent, the power being insufficient.

In the second case, the weight of earth moved, when the cultivator was going shallower and doing one acre per hour, was ascertained in three instances:

	Stones.	Lbs.
No. 1	24	4
No. 2	19	7
No. 3	22	0
Average weight of earth moved per yard	21	12
Weight of earth moved per acre	660	tons.
Weight of earth moved per hour by the so-called ten-horse-power engine, five men and two lads	660	tons.

5. *Fowler's so called fourteen-horse-power engine, with six-tined cultivator.*
Laborers employed, three men and two lads.
Weight of earth moved per square yard, ascertained in five instances:

	Stones.	Lbs.
No. 1	22	7
No. 2	22	7
No. 3	20	0
No. 4	24	0
No. 5	20	0
	—	10
Average weight of earth moved per square yard	21	—

Weight of earth moved per acre	650 tons.
Weight of earth moved per hour by the so-called fourteen-horse-power engine, three men and two lads	1, 240 tons.

The weight was here taken in so many instances because it was supposed that some mistake had been committed, the quantity of earth moved per acre by Fowler's cultivator certainly appearing to be very much greater than that moved by Howard's, whereas repeated weighings proved it to be actually somewhat less. The fact was, that it was thrown about so much more roughly in the former case that it lay looser and appeared deeper than it was. And one result of these weighings is to prove the fallacy of estimates of work of this kind by mere measurement, however honestly performed. The quantity of earth moved per hour (per day) is, of course, very much greater in Fowler's case than in Howard's. The power employed was much greater—how much greater is probably inadequately represented by the nominal horse-power of the several engines. The reader has, however, before him, in the speed of the engines and the size of the cylinders and the pressure of the steam, the means of comparing pretty accurately the power employed; and, contrasting this with the work accomplished in the several instances, he will draw his own conclusions of the merit of the several machines at work.

It is proper to add that the results of a racing trial do not necessarily represent the ordinary experience of the farmer, and that the above is to be taken as absolutely true only of the case here described, where ploughs and cultivators were employed on a clover stubble, in a light, sandy field, an hour or two last Tuesday. It is also fair to add that the clayey part of the field extended more and more towards the latter side of the field, here described, so that Fowler's eight-horse-power engine worked on lighter land, upon the whole, than Howard's ten-horse-power, and this latter on rather lighter land than Fowler's fourteen-horse-power engine.

We add the prices of the apparatus employed:

	£	s.	d.
1. Fowler's three-furrow plough, 800 yards rope, five-tined grubber, and rope porters, two anchors	295	0	0
Eight-horse-power engine	235	0	0
2. Fowler's fourteen-horse-power engine, four-furrow plough, rope porters, 800 yards rope and anchors	875	0	0
Seven-tined cultivator	70	0	0
3. Howard's double windlass, 1,400 yards rope and cultivator	220	0	0
Three-furrow plough	50	0	0
Ten-horse engine	295	0	0

JOHN C. MORTON.

AUGUST, 1862.

Extract from the report of Professor John Wilson.

Notwithstanding the enormous progress the country has made in its various industries since 1851, probably none has increased so largely and so healthily to the community generally as that now before us; and yet we find, on reference to the records of the last great exhibition, that the space allotted to the class then was very nearly double that of the limits within which it is now confined at South Kensington. We believe we are correct in stating that about 200,000 superficial feet were applied for by the different manufacturers, while only 17,000 superficial feet were assigned to them by the royal commissioners. Thus depriving several of the opportunity of exhibiting at all, and all of displaying their manufactures to the extent they had desired.

Those persons whose connexion with agricultural pursuits sustains their interest in such displays, and whose position gives them opportunities of examining closely the objects exhibited, will, no doubt, testify to the great improvement that is shown generally in the manufacture of agricultural implements, though they will not claim credit for the introduction of many new inventions since that period. In almost every department of machines and implements this improvement is shown; iron has been substituted, where practicable, for wood; light wrought iron now takes the place of the thicker and heavier cast metal; harmony is shown in the arrangement of different parts; strength is given where the strain or wear and tear is greatest, and where it is small all unnecessary weight is saved. Friction, too, is materially lessened by several ingenious contrivances in the construction of the larger machines, so that the deplorable difference, so often met with, between the *nominal power* and the *practical working* of some of the old machines, is now never heard of.

Although we cannot claim the introduction of many novelties since 1851, still there are two, which, from the great success they have met with, and from the magnitude and importance of their bearings upon the agriculture of the country, stand out in bold relief, and testify that we not only have been improving our manufacture, but also making great progress in the application of science in agricultural engineering. These two salient points of progress are represented by the reaping machine and the steam-plough. The first, it is true, was seen at the exhibition of 1851, and even then was not a new invention. It came to the general public, however, as a perfect novelty, and dates its *practical* existence from that day. Neither can we say that the steam-plough is strictly an invention since that date; it had been tried and had failed before then, and, consequently, had to be re-invented and re-tried before it achieved the success that now follows it wherever it goes.

Steam ploughs.—In the *first division* we find steam-ploughs and machinery represented by Chandler, (2,091,) Coleman, (2,095,) Fowler, (2,115,) Halket, (2,123,) Hensman & Sons, (2,126,) Howard, (2,131,) Leach, (2,143,) Robey & Co., (2,172,) and Steevens, (2,189.) These all appear to be upon the traction principle, where the engine is stationary, and the power is conveyed to the implement used through a wire rope. They differ, however, widely in the mode in which this power is applied, and also in the nature, form, and construction of the several implements used for effecting the object they all have in view, namely, the inversion of the soil operated upon. They all, no doubt, contain some elements worthy of notice, which it would not be possible to particularize within the limits assigned to this class. By common consent, however, two of the exhibitors—Fowler and Howard—are now looked upon as the most advanced of our steam pioneers; and as the results of numerous trials have placed in our possession valuable *facts* connected with their work, and as they represent fairly the two different methods now before the public for the arrangement of steam-ploughing tackle, we purpose taking their arrangements and their doings as the types of the present condition of "steam tillage."

The motive-power used for working the steam-cultivating machinery exhibited by Mr. Fowler is a double-cylinder 12-horse engine, self-moving, and fitted with reversing gear. The cylinders are 7 inches diameter, with 12 inches stroke, making 130 revolutions per minute, with a working pressure of from 70 to 90 pounds. The engine is fitted with locomotive gearing, by which it can move itself and the plough, if necessary, from field to field, whereby a great advantage is obtained over the ordinary portable engine, as the time and labor saved are manifestly great. Attached to the back of the engine is a large tender, which is fitted to carry a good supply of coal and water.

Windlass for steam-ploughing.—The ploughing windlass attached to the engine consists of the patent "clip-drum" or 5-feet sheave, around which the rope takes half a turn. The principal feature in this drum is the simple way in which the rope is held fast by means of two rows of "clips" or "leaves," (which is a section of a portion of the clip-drum,) these "clips" being centred to the upper and lower flanges from the drum; and thus a continuous groove is maintained, in which the rope lies. These flanges are connected together by balls and nuts. The adjustment of the clips to meet the different sizes of rope is effected by the lower rim of the drum, being a screw on which the loose rim that carries the lower set of clips is turned, thus causing the clips to rise or fall according to the direction in which the rim is moved. This sheeve is mounted on a stud, secured to a strengthening plate on the under side of boiler, and below this sheave is carried the drum or barrel upon which the rope is coiled. When not at work, this drum also carries the guide pulleys and press rollers, which conduct the rope to and from the drum.

Motive power.—The means by which the "hauling drum" is set in motion is through a vertical shaft, mounted on the side of the boiler, connected by bevel gearing with the crank-shaft, having a pinion on its lower extremity, working within the hauling drum, which pinion is put in and out of gear by a clutch movement, under the control of the engine-driver. Its locomotive power is communicated to the near hind wheel of the engine by a starting shaft and bevel gearing, working off the opposite end of crank-shaft. The off hind wheel may also be connected with the driving axle by a brake-wheel and strap at the command of the driver. Under ordinary circumstances its locomotive power will be found amply sufficient to travel the engine along any headland, but to meet any cases of difficulty a winding forward drum is provided, around which a rope is passed and secured to a supplementary anchor, laid out ahead of the engine. This drum being mounted on the hind wheel axle, and driven by the road gearing, winds the engine forward at a slow rate, but with a greater increased power than the road wheels could possibly exert.

Steering.—The "steerage" is effected by a hand-wheel, under the control of the driver, working the chain-wheel and pinion secured to the under side of the tank, and supported through it; the chains being carried under the engines, and attached to each end of the fore-axle. Two cultivating implements are exhibited, besides the well-known balance plough-frame and a 7-lined cultivator. The first-named implement is fitted with breasts suitable for ploughing, digging, and scarifying, thus being capable of arrangement for performing efficiently three distinct operations. The body of the plough consists of a rigid angle iron frame, strongly riveted together. This frame is balanced upon a pair of wheels and axles, but in such a manner that each wheel is capable of being adjusted, by a lifting screw, to the required depth of the work to be done, independent of the other altogether. The working side of this frame being bevelled, admits of the plough bodies being adjusted to different widths of furrow, and at the same time all obstruction is removed from above the mould-boards. By removing the mould-boards and strays, which can be readily effected, either digging or scarifying breasts can be easily substituted. The ploughman has his seat at the extreme end of the frame, and by a hand-wheel and rod, connected with a screw movement at the ball, regulates to a nicety the steerage of the implement.

Slack gear.—The arrangements for taking up the "slack" rope, which is generally termed the "slack gear," consists of two barrels or drums, mounted on axles across the frame near the centre of the carrying wheels; after the length of the field to be ploughed is taken, the rope is wound round these drums, thus practically forming an endless rope. On one side of these drums a chain-wheel is attached of the full diameter; and opposite, on each of the drum-axles, is a chain pinion of about one-fourth of the drum, running loose on the axle. The pinions are attached to the drums by a spiral spring on the axle. Its mode of action may be explained as follows: The man, on taking his seat, by his weight draws back the clutch from the hauling drum, which (if there be any slack) immediately gives off a portion of rope, and winds upon the opposite drum four or five times the length of slack, until the required tightness of rope for the work is obtained, when the implement begins at once to move forward. By this arrangement the rope always accommodates itself to any irregularity of the headland or curved boundaries of the field.

Cultivator.—The "cultivator" in its mode of working is precisely the same as the "balance-plough," but in its construction differs from it, by having at each end a set of "tines" which cover a breadth of six feet, with the frame extending outside the track of the wheels. The tines are readily adjustable to a depth of twelve inches in the socket of their frame, and may be fitted with any description of share or point for any particular soil or operation. This implement is mounted upon a pair of 5-feet wheels, and at each extremity is carried a small wheel of about two feet six inches in diameter, which regulates the depth of the work.

Anchor carriage.—The "anchor carriage," placed out on the opposite headland to the engine, carries the large sheave around which the rope passes on its return to the engine. It consists of a strong angle-iron frame, mounted on six disk wheels, with sharp cutting edges. On the top of the frame or body, and on the axle of the large sheave, the winding forward drum is fixed, around which the headland rope is coiled, the other end being attached to a "claw anchor," placed at some distance along the headland. Motion is given to this drum by means of the rope passing around the large sheave with which it is connected by intermediate gearing, thus winding itself forward at a regular rate, just sufficient to keep it opposite to the engine during the progress of the work.

Rope porters.—A series of "rope porters" are placed along the field at intervals of about forty yards, for the purpose of keeping the rope from off the ground. The outside ones are mounted on three wheels, so as to allow them to be moved by the rope as the anchor progresses.

Howard's steam-plough.—In Messrs. Howard's system an ordinary portable engine is used for working the apparatus. It is either placed at one corner of the field to be ploughed, or in an adjoining field, or even on the road alongside. It is connected either by a common leather driving band, or by a flexible universal joint, with the windlass which actuates the plough frame or other implement used, through the agency of a steel-wire rope. This rope is led off the windlass in any required direction, and from thirty to sixty acres may in this way, if properly managed, be operated upon without any removal of the engine or windlass. Messrs. Howard maintain that there are many advantages connected with their system of having the engine stationary when at work.

The several joints of the apparatus are very strongly yet simply made, and well adapted to the hard work and hard treatment they too often meet with on the farm.

Snatch-block.—The operation of paying out the rope is regulated by a double "snatch-block," fixed before the windlass. A central guide-wheel is mounted on a lever revolving between the two pulleys of the double snatch-block. The steel rope passes on either side the central guide-wheel and partly around the two pulleys, motion being given by the tight rope to the guide-wheel on one side, while the slack rope is taken off at precisely the same speed on the other side. The operation is thus rendered very similar to that of an endless rope around a single pulley. It is obvious that as the slack rope is kept in a partial state of tension, there is no difficulty by this arrangement, and by the use of the "porters," hereafter described, in keeping the rope clear of the ground.

The windlass is compact and portable. A pair of stout wood travelling wheels carry the winding barrels, which revolve on a central axle, and are geared alternately with their driving pinions by an eccentric movement of the axis, which at the same time brings the slack or paying-out barrel into contact with a friction roller, instead of the fixed brake-block hitherto used.

Anchor.—Two kinds of "anchorage" are used: one is a frame-work fitted with blades and anchor pulley, with an automatic movement for advancing on the headlands as the work proceeds, and requiring but little attention; the other is a modification of the ship anchor with a pulley attached. It is more expensive in labor than the self-propelling anchor, but it has the advantage of being cheap, portable, and may be worked in almost any position; and by its use the whole of a field, however irregularly shaped it may be, can be ploughed or cultivated without leaving the headland.

Rope porters.—The "rope porters," which are used at intervals along the whole line of the rope to keep it off the ground, are of a novel description; the pulley which carries the wire rope being mounted on a lever, by simply releasing which the rope clears itself—an operation which was often very difficult to perform with the porters ordinarily used.

Cultivator.—The implement used for cultivating or "smashing" is a framework of flanged wrought iron, with a pair of travelling wheels, and a seat for a man at either end. It may be worked with three or more tines or shares, according to the nature of the ground and depth of the work required. The tines rock on a centre, and have each two shares, pointing in opposite directions, consequently the implement does not require to be turned round at the land's end, the ploughman simply changing his seat from the one end to the other, in the opposite direction.

Plough.—The plough, which is made either with three or four furrows, may also be used as a cultivator, subsoil, or ridging plough. It is supported by a frame-work resting on three wheels, two of which on one side are used for steering. This is effected by the leading wheel turning outward, while the following wheel turns inward, the third wheel acting as a centre. By this arrangement the operation of steering is very easily and correctly managed. The beams to which the right and left hand sets of plough bodies are attached are of flanged wrought iron, and intersect each other at their inner ends, thereby reducing the length of the plough. The two sets of beams work on distinct fulcra, and are suspended by chains from eccentrics in such a manner that the set of ploughs out of work have little or no tendency to raise or lift up the set in operation.

REAPING MACHINES.—In this division we find all the different machines and implements used for harvesting purposes. The foremost and most important of them is the reaping machine, with which we were first made acquainted at the great exhibition of 1851. Even then it excited but little attention at first, and was well nigh passed by unnoticed. When the attention to it of the jury was at length obtained, it was criticised, examined, and finally sent to the field for trial, when its merits were speedily acknowledged, and its inventor rewarded with the highest honor the jury could bestow—*a council medal.* This event caused no little excitement in the agricultural world, as nobody could question that a machine which would efficiently represent hand labor in the harvest-field would be a great boon to the farmer; for in all field operations, despatch, especially in a changeable climate like ours, is a matter of great importance. Indeed, in some seasons, the last process of maturation is so rapid that it rarely happens that a farmer can obtain strength enough to cut all his crop at the precise time he would desire, without taking it from other operations which are perhaps of equal importance, and must equally suffer from delay. Another point to which equal consideration must be attached is the more efficient and economical manner in which the work is done by a machine than by hand labor. Under the ordinary circumstances of our harvests, we cannot estimate the average cost of labor, cutting, binding, and stocking, at less than ten shillings per acre; whereas, by the use of the reaping machine, the same work may be done for from three shillings to three shillings and sixpence per acre. The advantages exhibited by the machines at the trials that took place before the jury were so evident that they were at once taken up by the public, and orders in the ensuing season were showered down upon the manufacturers who were fortunate enough to secure the right of sale. Since that time, though various small mechanical improvements have been effected, no great change in the principle of construction has taken place. They have, however, found their way gradually into every district of the country, and now hardly a parish exists in which they have not been seen at work. Although it is only just eleven years since public attention was directed to them in Hyde Park, *about ten thousand machines* have been turned out by the different manufacturers, which, with the small exception of those supplied to the continent, have met with a ready sale at home.

It would be difficult to point to the introduction of any important agricultural machine which was so readily received by the public at large as the reaping machine was in 1851; and yet, if we endeavor to trace its history, and look back to earlier records, we find that, although strange to us, it was by no means a mere conception, but had indeed been transmitted to us from the earliest periods of agricultural knowledge, and been revived at various times when the circumstances of the country, or of some enthusiastic inventor, appeared to favor its introduction.

Roman reaper.—The Romans appear to have been the first to substitute mechanical for manual labor in the harvest-field, a description of which is given by Pliny (A. D. 23.)

As Palladius (A. D. 391) gives us a similar, though more detailed, account of this machine, we may infer that its use had been, under suitable conditions, continued in the Roman territories through, at all events, the past four centuries. It is from this description that the diagram illustration (Fig. 141) has been drawn. "In the Gallic lowlands," says Palladius, "they employ a more expeditious mode of reaping, requiring, in addition to the labor of men, the assistance of an ox to each machine during the whole of the harvest time. A cart is constructed, which is moved on two short wheels. The bottom of it, which is rectangular in form, is protected at the sides by boards sloping outwards, so that the upper part of the vehicle is wider than the lower. The boards in front of the cart are lower than the rest. At that part a great number of teeth curved upwards are arranged in a row, at intervals adapted to the size of an ear of corn. Behind this cart two very short shafts are fastened like the poles of a "basterna." To these an ox is yoked and harnessed, with his head turned towards the cart. The animal must be well broken in, so as not to exceed the driver's pace. When he proceeds to drive the vehicle through the standing corn, all the ears are caught by the teeth and fall in a heap into the cart, the broken stems remaining behind. The driver, who should follow the cart, regulates the elevation or depression of the teeth frame, and thus, by a few courses backwards and forwards, the whole crop is gathered in the space of a few hours. This system is advantageous in open and level countries, and in places where the straw is not much required." (*Palladius*, lib. vii, tit. 2.)

We find no mention made of any attempt at a reaping machine in this country until the close of the last century, when Arthur Young, in his "Annals of Agriculture," (1785,) speaks of one invented by Mr. Capel Lloft, of Bury, whose attention appears to have been drawn to the subject by a premium offered in 1780, by the *Society of Arts*, for a machine to answer the purpose of reaping the various grain crops. Curiously enough, Mr. Lloft conceived a machine similar in its form and construction to that of the Romans, and was greatly surprised when that was made known to him.

From this time up to the date of the Hyde Park exhibition inventors appeared from time to time, though none, with perhaps the exception of Smith, of Deanston, and Bell, of Carmylie, ever carried their inventions successfully into the field. These two gentlemen, though adopting quite different methods of construction, were clearly the pioneers of reaping by machinery in this country, and are fully entitled to our honorable consideration. Smith was an engineer of high standing, and withal a keen and observant farmer. His first attempt was at the harvest of 1811, when he worked his machine by manual power. In the next year's harvest he remedied the defects which he had discovered in its working, enlarged its size, and with one horse, instead of two men, he cut successfully several acres of his crops. He exhibited it in work before the Dalkeith Farmer's Society, whose report states, "that the corn was well and satisfactorily cut, but not laid with sufficient regularity." The following harvest the machine again appeared, with improvements and increased power; and with two horses and a driver it was again tested before the Dalkeith Society, who now reported that the corn was better laid, but imperfectly cut. In 1814 certain alterations were made, which improved its action greatly; and in the next year Smith's perseverance and ingenuity were rewarded by several very successful trials, some of which were in the presence of a committee of the Highland Society, who reported most favorably of its operation; and as an acknowledgment of their opinion of Smith's ability and skill, a piece of plate of the value of fifty guineas was, on their recommendation, presented to him. In these trials a Scotch acre (= 1.25 imperial acres) of beans was cut in one hour and a quarter. Satisfactory trials were also made with wheat and oats, which were cut and laid with perfect regularity at right angles to the path of the machine. From this time up to 1835, Smith's machine was tested occasionally in the different harvests, and various small improvements from time to time introduced. In that year the Highland Society held its great meeting at Ayr, and the improved machine was again brought out and exhibited with remarkable success. Its operations were shown on a field of wheat, and is thus described in the official record of the meeting. "The operation began, not on the outside, but in the middle of the field, through which the machine left behind an open lane, where nothing was observable but a closely shorn stubble, the corn cut being all laid down on one side against the standing corn. Never, perhaps, did an experiment come off with better effect or with greater success. The general impression was that the problem had at last been solved that Smith's machine was complete." Not such, however, was the fact, for, notwithstanding the success and striking effect of that day's trial, the machine remained, and to this day remains, without any further advancement. The only recompense the able and persevering inventor received was from the pleasure it afforded him to show his machine at work on his farm at Deanston to those who, at every harvest time, visited his remarkable works.

Mr. Bell, though later in the field as an inventor, and having to contend against well-nigh equal difficulties at the outset, has had the satisfaction of seeing his invention acknowledged, and adopted throughout the length and breadth of the country. His first machine was made in 1826, for which he received a reward of £50 from the Highland Society; and in the harvest of 1858 he exhibited it in the field of Pororie, in Forfarshire, before a large meeting of practical farmers, who testified to the ease and excellence of its work. In the harvest of the following years it kept its place in the field, receiving, from time to time, improvements in its working details, but making no progress beyond the limits of its inventor's home.

Matters stood thus until the exhibition of 1851. Most of the numerous inventions that we find recorded in the annuals of the Patent Office never reached the field at all. Some few were tried and failed. Smith carried his successfully through several harvests, and only gave it up under the pressure of more important occupations; while Bell's, though confined to its immediate home, continued plodding its way from harvest to harvest, and biding its time until some circumstance should arise which should give it its proper position in the auxiliary resources of the farm. This circumstance was long in coming; for it was not until the great exhibition in Hyde Park that the general public were aware that such a machine was in existence at all, much less that it had ever been thought of in this country; and even then when, *thanks to the Amcricans*, an opportunity was afforded of seeing working machines in the building, they were looked upon at first with suspicion, and but little disposition was shown to test their services in the field. The trials which took place, however, speedily dispelled the doubts and disadvantages that were before so generally entertained. The success of their introduction was complete. Since their numerous modifications of the original machine have been brought before us, and the trials that have taken place at the annual meetings of the great agricultural societies have, from year to year, testified to the improvements exhibited in their construction and operation on the field. With the manifest general advantages which reaping machines must confer upon an agricultural community at large, the question naturally presents: How is it that, although these machines had been known some forty years, nay, had been in practical use in this country for some twenty years past, they had not become more generally known, hardly, indeed, beyond the limits of the homes of their respective inventors? The reason is probably twofold: The imperfect construction and arrangement of the earlier attempts at once arrested their existence; and even when the more recent machines appeared, although more perfect in their mechanical appliances, the condition of agriculture generally was not sufficiently advanced to render their continued application successful, or their advantages readily appreciated. It is evident that they appeared before their time. Such machines could only *follow* good farming. Thorough draining, levelling of ridges, clearing away hedge-rows, and enlarging fields were all needed to remove the obstacles to their successful application. When these machines reappeared among us at the exhibition of 1851, they found these necessary conditions already in active progress in the country, and have, by the advantages they have conferred, aided us materially since then in carrying them out over the length and breadth of the land. The class is well represented in the exhibition, reaping machines being exhibited by no less than twelve firms.

The machine exhibited by Bell (2081) is a direct descendant of the original, improved by the practice of several years. It differs from the others in the mode in which the motive force is applied: in this it is by direct central propulsion from behind, in all the others the power is applied at the side in the ordinary traction manner. An endless band receives the cut corn, which is deposited in a cut swath on either side of the machine, while an arrangement is made for gathering the swath up into bundles sufficient for a sheaf, by means of a long-tined rake projecting from the side. This rides along the surface of the stubble, collects the cut corn, and drops it in a heap as soon as the rake is full.

Another machine on this principle is exhibited by the trustees of W. Crosskill (2102.) The machine is, like the preceding one, propelled before the horses, and can be as readily and as nicely steered as by the ordinary side-draught. It has also this great advantage over the other form of construction, as the machine cuts its own path into the standing crop in any desired direction; while

is necessary to send a man into the field to cut a swath equal to the width of e reaper before a machine on the side-draught construction can begin to work. he original scissor-shaped knife of Bell is no longer used; the shorter ser-ted-edged knife being substituted for it. This is worked on the reciprocating rinciple, and great care has been taken to make the different parts of the machine harmonize both in speed of motion and in the relative strength of their several parts, all of which admit of ready adjustment to suit the ever-varying conditions of the crops, the surface, and the seasons. The two-horse machine exhibited takes a cut of five feet nine inches wide; and the three-horse machine, a cut of eight feet three inches. On large farms this machine readily gets over from twenty to thirty acres without needing a change of horses.

Archimedean reaper, exhibited by Burgess & Key, and of which a wood cut is given, (Fig. 142,) is too well known to need a detailed description. It is on the side-traction principle, the cutting arrangements being a serrated-edged knife with a reciprocating movement. The standing corn is brought up to the face of the knife by a reel or fan revolving at a slow speed, and when cut is received on large wooden rollers, with deep metal spiral flanges, which are set in motion as the machine travels, and receive and deliver the cut corn in a swath at the side. These machines have been very extensively used; a large number are distributed throughout the country, and the numerous and satisfactory reports of their performance on the field testify to their practical value.

This machine may be taken as the representative of McCormick's principle of construction.

McCormick's reaper, with self-raking attachment.—McCormick's reaper of 1862, though essentially the same in principle with that of 1851, has been much improved in all its parts and working arrangements. The machine exhibited (Figs. 155, 156,) has a self-acting rake attachment, by which the grain is more regularly collected and removed, and the cost of manual labor saved. This has been patented in this country, and is likely to be adopted by Messrs. Burgess & Key, who from the first have been interested in McCormick's inventions. The mode of effecting this movement is extremely ingenious in a mechanical point of view. A wooden rake, with long wide-set teeth is used, to which certain motions are given, so that during one portion of the revolution of the gathering reel the rake acts as one of the vanes of the reel, gathering the grain towards the cutting blades, and then when the rake has been brought with its teeth downwards into a line with the cutting knives in front of the platform, it ceases to revolve around the reel-shaft, and is made to move horizontally upon a vertical hinge above one end of it, with the ends of the teeth near to the surface of the platform, so as to push the cut grain off the platform to one side of it. Motion is thus given to the rake so as to cause it to rotate around the shaft of the reel, and also so that the rake shall be brought into a line, or nearly so, with the shaft of the reel at that point of its revolution, when it again begins to act as one of the vanes of the reel. During the intermittent motions of the rake, the rotary motion of the reel-shaft is continued.

The manner in which this action of the rake is shown in the accompanying engravings—a cam, with levers or arms, and a ball-socket joint, being the simple mode of doing the work:

Fig. 1 shows the front elevation, and Fig. 2 a plan of the mechanism first spoken of; Fig. 3, sectional elevation; Fig. 4, detail.

CLASS 10.—*Civil engineering, &c.*

This was a very interesting class. There were no exhibitors from the United States. The English and the French were much the most extensive exhibitors.

Section B. Sanitary improvements and constructions.—No exhibitors from the United States in this section.

There are no remarkable discoveries in this department.

Ventilation, the most important subject connected with this section, is still undetermined, and the jurors say "there is nothing in any of the attempts to secure permanent ventilation calling for special remark, but generally they are all applications of a long established principle, made in the right direction."

Section C. Objects shown for architectural beauty.—No exhibitors from the United States, and the number of exhibitors from other countries were few, and nothing in this section calling for special notice.

CLASS 11.—*Military engineering, &c., large ordnance and small arms.*

Section A. Clothing and accoutrements.

Section B. Tents, camp equipage and military engineering.—No exhibitors from the United States. A much larger display than in the former exhibition, and more progress has been made in everything connected with this class within the last ten years than at any former period of like duration. The report is given in full in the appendix.

Section C. Arms and ordnance.—Rifle cannon, both breech and muzzle loading, have received their practical development since 1851. England is the only nation which has attempted anything approaching a full and complete exhibition of its implements of war.

The Armstrong gun is fully described in the report of the jury, (see appendix.) The government factory at Enfield is noticed, and part of the machinery in use has been brought from the United States.

S. Colt, Hartford, Connecticut, was awarded a medal for his principle of revolving arms, &c.

The American breech-loading rifle is specially noticed in the remarks of the London *Times*, before given.

CLASS 12.—*Naval architecture, &c.*

Greater and more important changes in naval architecture in its application to purposes, both of national defence and of commerce, have occurred since 1851 than have taken place at any previous interval of time. The armor plating of vessels, steam gunboats, change of form of vessels, the cupolas for warlike uses, so completely carried out in "the Monitor" of the United States, all have appeared since the last exhibition.

The screw-propeller, in the same period, has in a great measure superseded the paddle-wheel in ships destined for long voyages.

F. E. Sickles, of New York, received a medal for the ingenuity of his steam steering apparatus. This invention enables one person to control the course or direction of a ship with ease. By a peculiar arrangement of the cylinders and valves of a small steam-engine, the man at the wheel, by his manipulations controlling the rudder, simply opens the proper valves by which the power of the engine takes effect upon the "tiller ropes," and thus becomes the motive force, and the ship is thus held in any position desirable, as far as the strength of the apparatus will endure. This apparatus has been in successful use in the United States, and its great value is certified to by Captain J. J. Comstock, of the steamer Baltic, and others who have witnessed its trial.

Boats, barges, ships' tackle, &c.

Section B, &c: The report is given in full in the appendix.

One of the most important inventions is that of W. H. Ward, of Auburn, New York, of the night-signal telegraph, to which a prize medal was awarded.

It was understood that it met the approval of the royal navy; had been secured by the Viceroy of Egypt, and also by the French government. We give a description of it as given by Mr. Ward. It is to be regretted that it has not been introduced into our navy.

Description of W. H. Ward's, of Auburn, New York, night-signal telegraph.—It consists in the use of four lanterns, arranged at equal given distances in a vertical line, connected one to the other and the deck by means of jack-stays, and are as fixtures when properly triced up. Each lantern is provided with a movable screen envelope to hide the light, and a red lens envelope to color it, which are operated on and brought into requisition by means of small work lines coming down to the operator, who at pleasure screens or colors any one or more of the lights, thereby forming combinations indicating the numerals with the use of three lanterns, and the letters of the alphabet with the four, whereby continuous signal communications are maintained of any length on any subject with corresponding facility and correctness to that accomplished by the electric on the land, and applicable to any code of signals in common use, of whatever language, government or nation, and practical for transmitting or receiving the international news between America and Europe to and from the mail steamers while passing Cape Race, without detention or change of course.

These lanterns are so constructed as to be divested of their work gear, and used as ordinary signal lanterns by the flag-halyards, whereby 4 signals are effected by two lanterns; 24 with three; 64 with four; 160 with five, and 384 with six; making a total of 636 separate, distinct, one-hoist signals with six lanterns, and each signal displayed in a vertical line from any desirable part of the ship with all the sails set, showing the same at all points of the horizon; to remain, if necessary, for hours, or till understood and correspondingly acknowledged, making its reception a certainty.

These lanterns are applicable for steering, whereby instant signal directions are given by the pilot to the helmsman, by adding green lenses in connexion with the ruby, and used in manner following, viz:

The white light indicates attention, or steady; the red light indicates port the helm; the green light indicates starboard the helm, and the metal or screen envelope, when brought into requisition, indicates all right, or finished.

With one of these lanterns in the hands of the pilot and helmsman, respectively, instant orders are indicated by the pilot to the helmsman, who makes the lantern with him indicate the same as that of the pilot's, thereby signifying that he has respected the signal, and put the helm accordingly, amid driving storms, the blowing off of steam, or in action, when it would be almost an impossibility to have orders otherwise speedily and correctly given the ship's length, the very mistaking of which might endanger valuable lives, ship, and cargo.

The day signal flags are used in the usual way, but of a different kind. The flags composing this system are twenty-seven in number, thereby furnishing a distinct representative for each letter of the alphabet, including the character &, likewise the numerals by hoisting one of their number as indicative, which adapts them to any code of day or other signals in common use, of whatever author, language, government, or nation, and are useful within themselves, without any code, for holding continuous signal communications on any subject.

The advantages these flags possess is their simplicity and distinctness, being composed of only three colors, that present strong contrasts with each other, the clouds, sails, and horizon, and are so arranged as not to have any one division of color of less area than one-third the flag made distinguishable any distance the flag is seen, whether extended by a breeze or drooping in a calm.

John T. Schott, Port Washington, Wisconsin, a novel model life-boat, which embraced new features for the comfort and safety of persons wrecked at sea.

The New York Life-saving Benevolent Association is very fully described, showing its great advantages used in the saving of lives by the association. As many as 1,500 persons up to 1854 had been saved, two-thirds of whom had been brought on shore in the life-car.

CLASS 13.—*Philosophical instruments, &c.*

Darling & Schwartz, Bangor, Maine, a case of superior rules, measures, &c., remarkably accurate; a medal awarded.

This class was very fully represented, England and France being the largest exhibitors.

CLASS 14.—*Photography and photographic apparatus.*

In this class Dexter, from the United States, was awarded an honorable mention for a series of busts of the governors of the American States.

The French exhibition in this class was very superior.

CLASS 15.—*Horological instruments.*

The display of chronometers, watches, &c., in this class, was of extraordinary excellence. England, France, and Switzerland were the most extensive exhibitors. The variety of articles exhibited, and the excellence of workmanship, were in the highest degree creditable to the exhibitors.

American clocks, exhibited by Hallaway & Sons, Minories, London, agents for the American Clock Company, which found a lodgment in almost every hamlet in England, as it is said by the sellers.

CLASS 16.—*Musical instruments.*

Steinway & Sons, New York, grand and square pianos. A prize medal was awarded them for power, clear and brilliant tone of piano, with excellent workmanship shown in a grand piano, and in a square piano of large dimensions. This places Messrs. Steinway's pianos at the head of the whole list of instruments of that class, and where they are most worthily placed. The sale of these pianos and orders for others showed the appreciation of the public for these valuable instruments.

G. H. Hulscamp, of Troy, New York, grand piano of new and novel construction, and for which a prize medal was awarded.

The principle of straining the sounding board as shown in this instrument, and also in violins exhibited by him, was considered of much importance. His violins were approved by the best musicians, and it was reported that Mr. Hulscamp's were in reality the first really valuable improvement since the Cremona, invented centuries ago. A prize medal was awarded. The piano was sold at an early day to a distinguished gentleman in London, whose name is known in every country on the globe.

Melchior Ducker, of New York, piano and two trilodeons. These were excellent and much admired.

Our countrymen are greatly indebted to the juryman in our department, Dr. J. R. Black, who, though long a resident of London, is as deeply attached to his native land as any one of its most loyal inhabitants. He is a gentleman of most varied acquirements, and in this department was of great service to our country in bringing out the improvements made in our instruments, which, from his great skill in music as an amateur, he was fully competent to do.

England was largely represented, and the pianos were of great excellence, fully sustaining the reputation that had been long accorded to them.

France, as ever, was most fully represented, and sustained the credit long enjoyed of their superior instruments.

CLASS 17.—*Surgical instruments.*

In this class, Dr. Robert Bates, of Philadelphia, received a medal for his very ingenious instrument for the relief of stammering. Dr. Bates was very successful in his operations, relieving the most painful cases in a few moments, and by attending to his instructions the subjects would be relieved and could obviate all the difficulties experienced before the application of his instrument. His method received the approbation of the most distinguished medical gentlemen in London.

The report in this class is a very interesting one, showing very great improvement in surgery. Among American improvements, "Dr. Bly's leg, which allows both lateral and rotative movements, and permits the patient to walk equally well on smooth and uneven ground, deserves special mention." This valuable improvement was first publicly brought into notice by the New York State Agricultural Society, at its fair at Syracuse in 1860, and it is gratifying to be assured that this distinguished jury have selected this as one of the great improvements since 1851.

Alexander Yard, of New York, samples of water-proof court and adhesive plaster, which the London surgeons on trial pronounced superior, and commended to the profession.

Professor J. C. Matthews, of New York, fumigator for the lungs, a new invention. The report of this jury, which is a most interesting and important one, is given in full in the appendix. It shows a great advance in the treatment of surgical diseases, and many new instruments have been introduced which have proved of great value to the operators, and it is hoped of comfort and relief to the subjects. In 1851 only eleven nations were exhibitors. In this twenty-one are contributors, and Japan, in addition, shows several instruments that give evidence of progress in surgery there.

CLASS 18.—*Cotton*—(Section B.)

Gardner, Brewer & Co., of Boston, United States, bleached and brown sheetings; Manchester Print Works, of New Hampshire, United States, cotton prints. Prize medal. The jury remark generally that great improvements are observable in the cotton manufacture as compared with the former exhibition. Their report is given in the appendix.

We give a very full and valuable article on cotton by Professor F. L. Simmonds, F. S. S., &c., of London, which shows the regions of country where cotton is being raised, the amount received from the several countries, and his article contains many valuable suggestions which it is desirable should receive attention.

VEGETABLE AND ANIMAL PRODUCTS.

1. *Textile Materials—Cotton.*

[By P. L. SIMMONDS, Esq., F. S. S., F. R. G. S., Deputy Superintendent for the Colonies, &c., International Exhibition.]

Of the four great textile materials which form articles of human clothing, cotton, flax, wool, and silk, not one is indigenous to Europe. The two first are indigenous to America and Africa, and the others belong to Asia. Yielding to many other fabrics in beauty and texture, for health and comfort in the coldest or the hottest regions the cotton fabric is invaluable. The use of cotton as a material for clothing appears to have been one of the inventions of mankind. It is not our purpose to trace back the history of cotton production and spinning to the earliest records. Strabo, Pliny, Marco, Poh, Herodotus, and others, have been often quoted as furnishing details respecting what was then known as to the culture and use of the plant whose downy fibrous matter now figures so largely in the commercial statistics of the world. Our business shall be with the cotton trade of the present century; to state in brief terms the steps by which it has grown to its present gigantic proportions. In connexion with the raw material we must incidentally notice the statistics of the manufacture, forming as it does in the United Kingdom alone nearly a third of that commercial enterprise which envelopes the globe.

There is no industry of the present day which has attained such gigantic proportions as the cotton trade. Fully three-fifths of the population of the globe, estimated at 1,200,000,000, are directly or indirectly interested in its production or use. After the cereals, it is a product of the soil which employs more land and more hands than any other in its growth, preparation, transport by land and by sea, manufacture, and sale. In the process of spinning, dyeing, and finishing, it has afforded incessant scope for improvements in mechanical skill, led to the employment of a great amount of capital in factories and self-acting machinery, and given employment to an immense number of operatives.

In all its applications to the wants of man, it has rendered services which no one can overlook. On whatever side we turn our eyes, we find it employed in our dwellings, which it decorates in various ways, and it forms the clothing of both men and women. It unites pliability with firmness, elegance with strength; it combines readily in various forms with almost all other textile substances; it takes all colors; it can be made into the most gaudy tissues, suited to the demands of the most opulent, or into the coarser and cheaper fabrics required by the poorer classes. And besides these qualities, it has attained a wide and extended sale in the principal markets of the world, which has already reached a magnitude unparalleled, and yearly increasing. Marvellous as has been the increase of the production of cotton, and the increase of cotton manufactures in Britain, Europe and North America, each year adds a new increment to its amount.

In the first year of the present century the cotton goods exported from the United Kingdom were valued at £355,000. In 1860 the value of the cotton manufactures exported exceeded £50,000,000, and the quantity used at home was estimated at £40,000,000 more. But great as is the contrast in these figures, they fail to convey anything like an adequate idea of the wonderful strides that have been made in the productive powers of British industry, skill, and enterprise. Valued at the prices obtained prior to 1815, the cotton goods now annually produced in Britain would be worth upwards of £450,000,000. In the early part of the century the average value of a yard of cotton was 17¼ *d.*; now it is only 3½ *d.* Nor is this all. The article produced at the latter price is greatly superior in texture, appearance, and durability, to the costly fabrics manufactured prior to the inventions of Hargreaves, Compton, Arkwright, and others, to whose ingenuity Britain is indebted for one of the most important of her commercial interests, and the world for putting within reach of the poorest laborer, in all countries, luxuries that, a century earlier, could hardly be obtained by the wealthiest noble.

In Great Britain, the importation of cotton-wool in 1800 amounted to only 43,000,000 lbs.; and in 1860 it had reached 1,250,000,000 lbs. The total consumption of cotton on the continent of Europe, in 1860, was 1,878,000,000 lbs., and in North America 421,000,000 lbs. Mr. T. Bazley, M. P., calculates that not less than 5,000,000,000 of pounds of raw cotton are annually produced and consumed. "If," he says, "4*d.* per lb. be taken as a fair average price, the value will be above £800,000,000; and if 3*d.*, which would be too low an estimate, the amount would exceed £600,000,000 sterling.

"And if the population of the globe be 1,200,000,000, and that of the United Kingdom, who benefit by cotton production, is 30,000,000, what an idea does it convey of the wealth, power, and greatness of our country—that this one four-hundredth part of mankind should import nearly one-fourth of all the cotton which the whole universe produces!"

As an acre of land will, on the average, only yield 100 lbs. of cleaned cotton we must have annually under crop, to meet the wants of Europe and America, 23,000,000 acres; and to insure a proper rotation, not less than 69,000.000 acres of land are required for the production of the 2,300,000,000 lbs. of cotton that feeds the spindles of the European and American manufactories. At least an equal quantity is necessary for the Asiatic and African looms; therefore it is fortunate that the *Gossypium* (fig. 106) is indigenous to so large a portion of the earth's surface, and that it has been found capable of naturalization in latitudes extending 35 degrees on each side of the equator.

The principal sources of supply of cotton to Europe in 1860 were:

North America	1, 580, 790, 000
Brazil	22, 625, 000
West Indies, &c	11, 880, 000
British India	201, 740, 000
Egypt	60, 175, 000
	1, 878, 210, 000

To Great Britain:

North America	1, 115, 890, 000
Brazil	17, 286, 864
Egypt	43, 954. 064
British India	204, 141, 168
Other countries	9, 666, 048
	1, 390, 938, 752

The 12,419,000 cwts. of cotton imported into the United Kingdom in 1860 were estimated at £31,567,000; and owing to the advance in price consequent on the stoppage of supplies from the southern States of America, the 11,223,000 cwts. imported in 1861 were valued at £35,940,000. About 2,500,000 cwts. have been re-exported annually in the last two years.

In the British department, the cotton supply association of Manchester show, in class 4, eastern annèxe, a case with a large selection of cottons, evidencing the wide extent of field from which supplies may be drawn.

Taking them geographically, we find here exhibited samples from the following localities: the Fejee Islands, New Caledonia, and Tahiti.

In Australia: Sydney, Woolloomooloo, Queensland, (Wide Bay,) Northern Australia, and Southern Australia.

Indian Islands, &c.: Java, Peros, Bankos, Andamans, Seychelles, Philippines, Japan and China, Siam, Ceylon, Terrasserim Provinces, Assam, Indore, Pailghatu, Daolera, Berar, Oomerawuttee, Inglehaut, Chingliput, (sea-island, American seed and fine cotton,) Dharwar, (American seed,) Kurrachee, (Egyptian seed.)

From Africa there are specimens from Egypt, Algiers, Shire Valley, Onitsha, Soudan, Gambia, Loanda, Goldcoast, Old Calabar, and other parts of the west coast; from Natal and Kaffraria.

From Asia and Europe: Georgia, Ispahan, Bagdad, Khorassan, Mossul, Jaffa, Smyrna, Latakia, Constantinople, Lanarka, Catania, (Sicily,), Enos, Attica, Argoly, and Karsons.

From South America there are samples from Peru, Payta, Callao, Bahia

Maranham, Maceio, Pernambuco, San Paulo, Cuenca, (Ecuador,) San Louis and Bolivar.

Berbice and British Honduras also show their cotton capabilities; and there are samples of cotton from Jamaica, St. Kitts, Tobago, and East Caicos.

From North America: Edisto Island, New Orleans, Mobile, upland.

Although this collection is extensive, it by no means represents all the cotton-producing localities; and from an association which has especially devoted itself to the collection of samples and the diffusion of information as to cotton cultivation, which has also large funds at command, a monthly organ of publicity, and has opened up correspondence, through mercantile and official channels, with so many foreign countries, we had looked for a better display and more general public information than is afforded in this case. There is not an item of statistics appended or a word of guide as to comparative values and qualities of the cottons, which would have been of use to many visitors. The case might have been made much more complete by appending, in all cases, the pods, showing by scale the length of staple, and adding some of the subsidiary products obtained, such as crude and ripened cotton seed, oil-cake, cotton waste, (for paper,) the hulled seed, and fibre from the bark of the plant.

The cottons from the southern States of America are chiefly classed into two groups—New Orleans, or upland, which is of a short staple, of a mean length of one to one and one-fourth inch, and is grown inland; and that cultivated upon the isles near the shores of South Carolina and Georgia, termed sea-island, which is of a long staple, averaging one and one-half to two and one-eighth inches. The quality of cotton is distinguished by the length, strength, and silky fineness of its fibre, and by its mellow white color.

The upland cotton of Georgia is also known by the name of bowed cotton, owing to an operation formerly practised of loosening the seed from the cotton-wool by striking the pods with a stringed bow.

The finest of all fabrics is made from sea-island cotton, such as muslins, sewing cotton, &c., and much of it is used for mixing with silk, worsted, alpaca, &c. From three hundred to four hundred hanks to the pound is as high as is regularly spun of this kind of cotton; but one thousand and fifty hanks, or five hundred and one miles, to the pound, was spun by special effort for the exhibition of 1851, by Mr. T. Bazley.

New Orleans cotton is the great staple of the spinning trade, and is used for making calicoes, fustians, velvets, and almost every kind of cloth and article that cotton is used for, being soft, white, of medium staple, and clean. It is also used for mixing with all other cottons. New Orleans is usually spun from six to thirty hanks, or fourteen and one-fourth miles, to the pound, for hosiery and other purposes, and from thirty to eighty hanks for general purposes.

Egyptian cotton is used for making articles similar to those for which sea-island is employed; but it is generally used for warp of a coarser kind than the sea-island. The length to which Egyptian cotton is usually spun is from sixty to one hundred hanks to the pound. It is occasionally, however, spun both finer and coarser. The length of staple is from one to one and five-eighths inch, and it has a fine, easily-spun filament.

Nankeen cotton is of very short fibre, from five-eighths to one inch long. It is not at all an article of commerce here, but at Malta and other places it is so; and at Tunis seems to be preferred to the white cotton of that country, Smyrna, &c. It is only spun from six to fourteen hanks to the pound.

Brazilian cottons are in good repute, and receive the different appellations of Pernambuco, Bahia, Maceio, Maranham, &c. The Pernambuco enjoyed for a long period the reputation of being superior to any other than the sea-island or Bourbon. Pernambuco is the principal cotton-growing province. The interior possesses inexhaustible fields where cotton grows wild, and if proper roads could be formed, its production might be greatly extended. Brazilian is principally a warp cotton, and is used for inferior qualities and coarser makes of ordinary goods. It is frequently used with American. The length of staple ranges from one to one and one-half inch; the length to which it is spun is usually from forty to eighty hanks to the pound, or ten to thirty-eight miles. From some of the Brazilian cottons, yarn up to number two hundred and fifty may be spun.

Some of the cotton-pods from Brazil are of a magnificent quality, the long fibres hanging pendant from the capsule to the length of six or seven inches. Cotton is shown from ten out of the twenty provinces of this empire, namely: from Rio Janeiro, Pernambuco, Alagoas, Amazonas, Ceara, Para, Parahyba, San Catharina, San Pedro, and Bahia. It is also grown in several of the others. Our supplies from Brazil have been declining of late years, owing to the establishment of cotton factories in Bahia, Rio, and some other provinces, and to the difficulty of transport to the coast from the interior, as cotton cannot be successfully cultivated near the coast. Some of the cotton shown from Brazil is of a lightish yellow or buff, and others of the nankeen color.

In the Venezuelan court samples are shown from fifteen bales of cotton from Maracaibo, imported by Messrs. Stoterfoht Sons & Co., of Liverpool, and sold to Thomas Bazley, esq., M. P., of Manchester, on the 11th April, 1862, at *2s. 5d.* per pound. There are thousands of acres in the province of Maracaibo, as also in Guyana, Aragua, and other provinces in Venezuela, where cotton of the best quality might be produced in any quantity. Samples of this cotton in various processes of manufacture are also exhibited by T. Bazley, esq., and raw cotton from many other parts of Venezuela by sundry contributors. From the British West India possessions there are cottons shown from Jamaica, Barbadoes, Dominica, Trinidad, Demerara, the Bahamas, and also from Hayti.

In Martinique the culture of cotton was never very considerable. In 1779, when it was in the greatest favor, it did not extend to seven thousand acres. It has almost gone out of culture now, and in very few localities is the cotton plant met with. There are three or four exhibiters, however, of cotton now.

The Antilles have always been considered the original source of the long-stapled cotton. It formed a portion of the tribute imposed upon the Caribs by Columbus. The districts of San François, of Bailly, and other old settled parts of Guadaloupe, and its dependencies of Desirade, the Saintes, and Marie Galante, for a long time furnished supplies to the European markets. The culture attained its greatest elevation in 1808, when the exports had reached one million four hundred thousand pounds. The wars of the first empire, the ignorance of the planters, who permitted the best varieties to degenerate, and introduced commoner but more productive kinds, and the increasing demand for sugar, led to a rapid decline. Meanwhile immigrants from the Bahamas carried the seed from Guadaloupe to South Carolina, and thus established the element of the commercial importance of the United States in this staple, which led to the fall of the colonial prosperity. This was the origin of the famous sea-island cotton. For several years past the French government has endeavored to revive cotton cultivation in this favorable part of the Antilles, and one of its agents, M. Grellet Balguerie, is endeavoring to reintroduce and establish the kinds most esteemed in the sea-island and Georgia long-stapled cottons. The exports of cotton from Guadaloupe in 1860 were thirty-three thousand six hundred and eighty pounds. There are a large number of samples shown, and some of the indigenous cottons produce very fine yarn, as is evidenced by the tarlatans and muslins manufactured from it at Tarare.

The culture of cotton long flourished in French Guiana; but the deficiency of labor, the decline in price of cotton, and the more remunerative rates obtained for other products of the soil, led to its abandonment. But under the impulse of encouragement given by the local government it is beginning to revive, and the specimens now exhibited prove the capabilities of the colony for furnishing supplies of excellent quality. The yield per acre on high lands is stated to be three hundred and fifty pounds of seed cotton, and on the low lands five hundred to seven hundred pounds of cotton.

If labor were but available, an inexhaustible supply of cotton, of every description, might be produced in British Guiana. All kinds of cotton, from the best long staple down to the finest short staple, might be cultivated there, as the kind which does not thrive in one soil or climate could be produced in another.

An extent of sea-coast of two hundred and eighty miles, from the river Corentyne to the mouth of the Orinoco, would produce cotton vieing with the best in the world. At the commencement of the present century the whole cultivated surface of the colony, from end to end, was a large cotton field. In 1803 the exports amounted to forty-six thousand bales, of about three hundred and fifty pounds each. It only requires some care and attention in collecting seed in order to produce a fibre having the color, evenness, and strength of sea-island samples. Sir Robert Schomburgk doubts the opinion that the finest cotton will not grow at a greater distance than twenty miles from the sea. "I have sent," he says, "samples of the wild cotton from the interior of the colony, which were admired by competent judges for thin, fine, long staple and silky appearance. No care whatever had been bestowed upon the cultivation of these plants, which grew at a distance of three hundred or four hundred miles from the coast." This opinion is borne out by the fine cotton growing in the interior of Queensland and New South Wales.

Cotton is shown from a large number of sources in Africa—from Liberia, Gaboon, Abbeokuta, Natal, &c. African cotton has only recently come into use, but is found to be excellent for hosiery and many other purposes. As it cards and draws very well, it is liked by those who have used it. It is from 1 to 1¼ inch long, and is spun from 6 to 30 hanks per pound for hoisery purposes, and from 30 to 60 hanks for general purposes.

The commercial association of Abbeokuta have forwarded samples of cotton called *akase*, cleaned and bowed and in seed; ordinary native cotton, and green, black, and brown seeded cottons, as well as thread and coarser, strong spun cotton and cotton cloths. The association states that cotton is obtainable in any quantity, and is now grown extensively throughout the Zambesi country. To obtain a largely increased supply it is only necessary to open roads and bring money to the market. Upwards of 2,000 bales were exported thence last year, and this quantity would have been doubled or trebled if the country had been at peace. The present local price is but 5*d.* per pound. Great quantities of cotton cloths are annually made, finding their way to the Brazils and into the far interior.

It appears from the narratives of all African travellers that cotton is grown very extensively in all parts of Africa. Dr. Livingstone tells us of vast ranges of country suitable for the cultivation of the plant. In one place he says: "The markets are well supplied with provisions by great numbers of women, every one of whom is seen spinning cotton with a spindle and distaff, exactly like those which were in use among the ancient Egyptians. The cotton was brought to the market for sale, and I bought a pound for a penny. This was the price demanded, and probably double what they ask from each other. We saw the cotton growing luxuriantly all around the market-place from seeds dropped accidentally. It is seen also about the native huts. We met on the road natives passing with bundles of cops or spindles full of cotton thread, and these they were carrying to other parts to be woven into cloth." In a country so congenial to the production of the staple, with a population naturally docile, though fond of display, there requires but the opportunity and the knowledge that they can at once exchange the raw material, so easily obtained, for the fabric they so highly prize, to induce them to apply themselves to cultivating and collecting it at such points as may be selected by the European traders for making the exchange.

The local administration of the French colony of Senegal sends some cotton, (*G. punctatum.*)

No place is more suitable for the culture of cotton than Senegal, since it is found growing wild, is very prolific, and extremly hard and durable. Notwithstanding the obstacles which at present seem to stand in the way of its systematic culture, there is hope that it may be ultimately carried out with satisfactory results. There is an immense extent of territory between the two rivers which might be devoted to its culture. The men of Cayor, Onali, Fouata, and Galam grow cotton to supply their own wants, but the facility with which they can produce European goods, and the absence of any important demand hitherto, has kept the production within narrow bounds. Twisted by the hand, and woven in a rude manner into narrow strips, mixed with silk or wool, the indigenous cotton is converted into stuffs which serve in the country for a medium of exchange, and are known at Bakel and St. Louis under the name of "pagnes sor."

The government encouragement and the increase of price resulting from the American civil war have directed commercial attention to this quarter for supplies. But it is in Lower Senegambia, and towards Casamance, that the administrative efforts have been chiefly directed. To meet the demands for cultivation and to prepare the fibre, a complete stock of implements, gins, presses, &c., were imported, and the first consignment of cotton transmitted from this quarter has been received. The cotton of Senegal is fine and shorter than the ordinary cotton of the Confederate States, but useful for replacing the medium kinds. The settlements of Gaboon and the Gold Coast also show fair specimens of cotton.

The cotton plant grows readily in Natal. Last year about 2,000 pounds weight were exported, the first fruit of small experiments. The six samples (numbered 201) shown in the Natal court are specimens of this produce. The main difficulty for the present in the way of success seems to be the readiness with which the colonists find more productive applications of their energies, and the unwillingness with which the Kafir enters upon any system of work that ties him to the performance of a certain task at a certain time. The colonial government is at the present time making an attempt to encourage the Kafirs to grow cotton. It would be premature to say much as yet of the prospects of this experiment; but cotton in the pod and in the seed is shown, and also samples grown and ginned by the natives.

The splendid specimens of cotton from Algeria cannot fail to command admiration, as they did at the Paris exhibition in 1855. Especially are the samples of Georgia and Louisiana cottons deserving of notice, and equal to any produced in other countries for their color, fineness, and strength of filament. The best authorities admit that the quality cannot be excelled, and it only remains tr produce it in quantity, for which labor and capital are requisite.

In the French colonial courts a large collection of cottons, the produce of Algeria and other colonial dependencies, is shown in glass jars, and five extensive branches of cotton with the capsules arranged on the walls.

In the Italian courts there is a good collection of native-grown cotton in the pod, cleaned and uncleaned, with the seed, nankeen cotton and *G. Siamense*, grown in Napoli. Malta shows white and nankeen cotton, and rough manufactures of it.

On page 87 we have given diagrams, drawn to a scale of half the natural size, showing the relative lengths of staple of cotton grown in various parts of India. This table has been prepared from the returns of Dr. J. Forbes Watson.

The East India cottons have been very much improved by attentive culture and better cleaning of late years, and have become largely in request to meet deficiency in supplies of American cotton, although they cannot replace the qualities of superior American. Within the last twenty years the general export of raw cotton from India has more than doubled. The imports into Great Britain alone have advanced from 85,500,000 pounds to 204,000,000 pounds. The indigenous cotton of Berar is an excellent quality, and second to none that is grown in India. Madras and Surat is the commonest of all cotton, being used only for coarse cloth and other articles of great bulk and little value, and for lowering the quality of American, &c. The staple is from $\frac{5}{8}$ to 1 inch long, and it is usually spun from six to fourteen hanks to the pound. Bengal cotton is more white and silky, and yields yarn to No. 50.

There is a very complete collection of cottons in the Indian gallery, on the west side of the N. E. transept, and Dr. J. Forbes Watson has done much to diffuse information as to the culture, character, and extent of supply of Indian cottons.

In the French settlement of Pondicherry, cotton factories have been in operation for some time, where are produced muslins, pullicates, cambrics, and coarse fabrics called guineas. To M. Desbassyus, of Richmond, administrator general from 1826 to 1828, is due the first idea of a spinning and weaving factory. Owing to the efforts of the first manager, M. Charles Poulain, and the government, which granted large subsidies, this industry has prospered here. One factory, under the management of Mr. Saint Pol, has 16,000 spindles and gives employment to 500 workmen. The production of thread is about 1,200 kilogrammes per day. Another establishment, that of M. Potier, of Houssaye, supplies the looms of a great number of native weavers. The weaving by machinery is also conducted by M. Desbassyus, who is represented at Pondicherry by Mr. Godefroy.

From Reunion, or Bourbon, there are five or six exhibiters of cotton. Although the soil and climate are well suited to the culture, the production has greatly declined since the possession of the island passed into the hands of the French, in 1815. One of the principal colonists, M. de Chateauvieux, of St. Leu, has lately made strong efforts to bring under cultivation with cotton the waste lands in the lower part of the commune of which he is the administrator.

The Bourbon cotton makes a great deal of waste, but it is very uniform, pure, fine, and silky, and may be spun to very high numbers.

Specimens of cotton are sent from Siam, and it is to be regretted that the Siamese cannot be induced to cultivate it more extensively. Small quantities are produced in the Lao country. The great distance, and the difficulty of transport to Bangkok, added to the scarcity of labor, have no doubt injuriously operated in preventing the development of the trade. But for these difficulties there is no reason why the alluvial districts of Siam should not produce as fine cotton as the United States, West Indies, or Guiana.

Coverlets manufactured in the Lao country from native cotton, cotton thread colored with native dyes from Tavoy, and the spindle usually employed for spinning cotton, are shown in this collection, which is transmitted by Sir Robert Schomburgk.

The production of cotton in Cochin China might be rapidly extended on the high lands which border the rivers to five or six miles in the interior, and at a future day this district may be made to supply the raw material for a large portion of the French factories.

The subject of cotton cultivation appears to be spreading throughout the British colonies, and there can be but little doubt that ere long this article will form a principal staple of export at places where it has never yet been cultivated.

The natives of Ceylon have raised crops sufficient for their own use from time immemorial, and the native cloth is strong and useful. The capabilities of this island for producing cotton of fine quality and in large quantity are unquestionable. The soil and climate are considered to be superior to that of India for the purpose, and it can be grown equal in quality and cheaper in price than that of the United States. There are at least 12,000 square miles of land admirably suited for its cultivation, and if the production were seriously entertained, in a few years one million of bales might be shipped from thence.

In the Indian collection a fine sample of Penang cotton is shown. Cotton has never yet been extensively cultivated in the straits settlements. It has, however, been long introduced, and the staple of one of the varieties now grown is of a very superior quality, and begins to bear in six or eight months after planting. Bushes have been observed for six or more years in constant bearing. The chief obstacles to the culture here are stated to be the price of labor, and the sudden vicissitudes of climate from wet to dry.

The cultivation of cotton in the new Northern Australian colony of Queensland promises to be a great success, and the samples sent to England on this occasion have attracted great attention, and have been even thought worthy of notice in Parliament by Mr. Bazley. At the local exhibition in the colony, preliminary to the transmission of the collection to England, no less than twelve samples, of 10 pounds each, of clean sea-island cotton were brought under the inspection of the jurors, three of which obtained silver medals. One sample of upland, or New Orleans cotton also gained a silver medal. Samples of cotton from various other localities in the colony, hundreds of miles apart, were also shown, proving that sea-island cotton of fine texture and quality cannot only be grown in the neighborhood of Brisbane, Maryborough, Gladstone, and Rockhampton on the coast, but upon the elevated table-lands of the colony. One sample picked from plants grown in a garden at Camboon, upon the upper Dawson river, rivalled in texture that grown upon the coast. The first local medal was awarded to Mr. W. Cairncross, of Bauba, for a sample of 3 pounds of cleaned sea-island; the second to Mr. J. Pratter, of Cooper's Plains, who sends 250 pounds; and the third to Mr. P. W. Thompson, of Noman's creek. The difference in the quality of the several samples was barely perceptible. Mr. Pratter obtained from one acre (less six roods) about 1,200 pounds of seed cotton, which yielded something over 300 pounds of a clean marketable article. To illustrate the benefits to be derived from the supply of cotton as well as sheep's wool from Australia, a few dresses have been manufactured from the beautifully fine lace thread, No. 250, spun by Mr. T. Bazley from Queensland cotton; and this blended with fine yarn made from the wool of sheep of the same colony, has furnished a fabric resembling Cashmere in softness and beauty. Some of the Queensland cotton has been priced at 3*s.* 6*d.* per pound.

From New South Wales eight samples of cotton are shown—one grown on the Hunter river in 32° south latitude. The Clarence and Richmond districts, in the northern part of the colony, are stated to be well adapted for cotton. One exhibiter, who speaks from experience, having been in Charleston, considers the climate and soil to be of the same character. Samples of New South Wales cotton are the finest in the exhibition, and worth now about 4*s.* per pound.

In New Caledonia we find two varieties of cotton, of which several samples are shown; one obtained from Florida, which the Mission of Conception have put largely into cultivation; the other an indigenous species, with a bluish tinge to the cotton-wool.

In Tahiti, wild cotton (*G. incuspidatum*) is found growing spontaneously. There are two exhibiters. It has hitherto not received any attention, but plantations are now seriously contemplated. *G. indicum* and *G. vitifolium* have been introduced. The government, desiring to encourage this industry, has, since 1858, offered a bounty on exportation of twenty per cent. beyond the price at Papeiti. There is a wild species (*G. religiosum*) found growing on the roads and plains, on the borders of the sea; of this there are two varieties—one with a nankeen cotton, the other white—of an inferior quality, and with diminutive capsules. The cultivation of cotton in the Fejees might be advantageously carried on; and we have received from M. Berthold Seeman beautiful specimens of cotton grown in those islands, which it is proposed to place under British protection.

Some of the specimens sent from Trinidad were from the Bocas islands, which were formerly covered with plantations, but abandoned during the last thirty-five years. The present specimens are from the wild trees scattered here and there over the islands.

From the Bahamas specimens of the cotton indigenous to, and now growing wild on these islands, is sent. The American seed came originally from the Bahamas.

In the Peruvian court are several specimens of fine cotton; among others, samples from the estate of San Javier de la Nasca, situated about eighteen leagues from a port of shipment. Five hundred bales of Peruvian cotton came across the isthmus, and were imported by one of the royal mail steamers. This cotton is of a long staple, and about equal in value to Pernambuco. The actual produce, at present, is 1,200,000 pounds annually, but the estate is capable of producing 3,000,000 pounds annually.

It has been demonstrated that cotton of the finest samples can be produced in the eastern province of the Cape colony, but no effort has been made to test it upon an exportable scale; no catalogue has yet shown the quotation of any bale or bales of South African cotton sold in the home sales. Some of the amateur growers have lost confidence, and urge that the high winds destroy the plants. This is true of some kinds of seed, but the planters have yet to find out the sort best suited to the soil and climate. The cotton shrub, indigenous to the colony, would, if cultivated, produce a marketable and remunerative article, worth, probably, tenpence per pound.

Cotton grows in Cochin China spontaneously, and France is looking forward to obtain supplies from thence. It is termed in the country "short silk," and is said to be nearly as good quality as New Orleans. Its thread is long, soft, and silky, and its color a clear white; 2,000,000 pounds weight has been exported from Lower Cochin in one year, half of which was sold at Saigon. The soil of the entire country is suited to its culture, but the inhabitants do not much attend to its growth, as they consider it too laborious.

CLASS 19.—*Flax and hemp.*

The United States had no exhibiters in this class. We give an extract from a report made by Professor J. F. Hodges, M.D., F. C. S., analytical chemist to the Chemico-Agricultural Society of Ulster, Belfast. He is one of the ablest men in this field in Europe, and his report embodies all that is known as yet in regard to the flax plant and its manufacture, and must be of great interest at this time when so much is being done in our country for the improvement in the culture and preparation of flax. That we shall yet secure the flax cotton as a substitute for cotton we indulge the strongest hopes, and though not successful as yet, there are indications, we think, that point to a final triumph.

Professor Hodges, after discussing the history of flax in Egypt, and the reputation of the "fine linen" of Egypt, proceeds to its history in Ireland, where the flax plant appears to have been cultivated, for the sake of its fibre, from a very remote time. It may be that the knowledge of its valuable qualities had been carried to this country by eastern colonists. Not even in Ireland, until comparatively modern times, do we find any great extent of land devoted to the growth of flax. The arrival of a colony of Huguenot families, expelled from France in 1645, appears to have given the first impulse to the extended cultivation of the crop, and the improvement of the processes employed in its manufacture. The flax plant, which affords the raw material of the linen manufacture, is a graceful annual, which, on a tall and slender stalk, produces delicate blue flowers, succeeded by capsules stored with oleaginous seeds. It is the "*linum visitalissi-*

mum" of the botanist, and belongs to a family called *Linaceæ*, of which it is the type. There are numerous varieties, some producing white flowers, and others regarded as possessing medicinal qualities; but the flax of commerce is chiefly obtained from the blue flowering, the *linum visitalissimum*, which has been found capable of yielding its important fibre, when grown, upon almost every variety of soil. The best soils, however, are light, dry loams, with moderately tenacious sub-soils, neither so loose as to allow the water to run away too rapidly, nor so compact as to cause it to stagnate about the roots of the plants. It is indispensable to the successful culture of the crop that the soil should be made as fine as possible by careful tillage, that it should not be exhausted by repeated cropping without a proper supply of fertilizing materials, and that all stones and weeds should be removed. In Belgium, flax is usually made to follow a corn crop, and it is frequently grown in the third year of a seven-year course rotation, or the fifth year of a ten-year rotation. It should not, however, as is sometimes done in this country, be made to follow two oat crops, as in such cases a short and miserable produce has been the result.

The quality of the textile fibre produced by the flax may be materially modified by the method of cultivation adopted. When the plants are allowed to grow at considerable distance from each other a hard woody stem is produced, and numerous lateral branches thrown out, yielding an abundant crop of seeds, while the fibre is short, coarse, and harsh to the touch, and of inferior value; but when by thick sowing the stalks spring up close together, the deposit of much woody matter is retarded, and a tall and slender stem with delicate fibres, and only a few branches near the top, is the result. The celebrated "stalked flax" *(lin ramé)* of Belgium, from which the delicate lace of Brussels is manufactured, and which when scutched sells at from £300 to £350 per ton, shows how much the development of the fibre is under the control of the agriculturist.

In many districts in Belgium, in which country the cultivation of the crop and the separation of the fibre has been brought to great perfection, the best flax soils contain a very large amount of silicious matter in a finely divided condition, and without the abundant supplies of manures which the Belgium farmer carefully provides, would be incapable of yielding a remunerating produce. The following is the composition of two specimens of flax soils from the Pays de Waes, where flax of the best quality is produced:

	No. 1.	No. 2.
By washing, 100 parts were found to consist of clay	9.00	8.00
Fine sand	91.00	92.00
	100.00	100.00
By analysis:		
Water	3.80	1.85
Organic matters	4.48	3.25
Silicious matters	87.04	91.80
Peroxide of iron	1.96	1.16
Alumina	1.52	1.22
Carbonate of lime	0.96	0.55
Carbonate of magnesia	0.27	trace.
Alkaline salts	0.20	0.14
	100.23	99.97

The seed used for sowing in this country is either the Russian seed, brought from Riga, or Dutch seed, and the month of April is regarded as the proper season, from 2½ to 3 bushels being sown per acre. In the month of June the crop is in flower, and towards the end of July the flowers are succeeded by the capsules or "bolls," which, as the plant ripens, gradually change in color from green to a rich yellow. The plants when regarded as ready for removal from the field are pulled by hand, and to insure a strong and fine fibre it is considered that the flax should be allowed to grow until the leaves are fallen from the lower part of the stem, and its color for two-thirds of its length has acquired a yellow tinge.

The flax when pulled is made up in the fields in stooks as adopted in Belgium, or by means of an implement like a comb, called a "ripple," consisting of a row of iron teeth fixed in a block of wood, which is screwed down to the centre of a plank supported on two stools; the bolls are removed by drawing the stalks through the iron bars. The capsules are received on a sheet and partially dried by exposure to the air, and afterwards by the heat of a corn-kiln. The rippled flax is now ready to be submitted to the process by which the elastic fibres may be separated from the other portions of the stem, and prepared as textile material. In Belgium, the work of the farmer in many districts ceases with the pulling and drying of the crops, and the separation of the fibre for the flax spinner is properly undertaken by persons who devote themselves to this department. In Ireland, however, the separation of the fibre, notwithstanding the efforts which have been made to transfer the work to the factory, continues, as in many other countries, to form a part of the ordinary labor of the farmer, and unfortunately the idea that the removal of the seed injures the quality of the fibre even yet induces the flax-grower in many parts of the country to place the unrippled flax into the deep hole.

Before entering upon a description of the various methods adopted for the separation of the fibre, it will be useful to consider the structure of the stem of the flax-plant and the nature of the materials of which it is composed.

In flax the vast fibres form long cylindrical tubes, in which the central cavity is almost obliterated by numerous concentric layers of a material which adds to the strength of the tube. This lining material is so soft that the fibre, when pressed upon, retains the mark of the impression; at the same time, from the strength of the walls of the tube, its cylindrical form is preserved. The careful employment of the microscope and of the chemical reagents is generally sufficient to enable us to distinguish the chief fibres of commerce even when mixed together in woven fabrics.

On making a transverse section of the stalk of the ripe plant, it is found to consist of three parts, presenting the appearance of concentric rings, which, especially when the plant has been softened by being placed for a short time in water, can readily be separated. So far it is possible by the naked eye to recognize the division of the stem of the plant into three distinct rings; but the botanist who, by the assistance of the microscope, is enabled more closely to investigate its structure, discovers, by the examination of a horizontal slice of the stem, that the external layer or zone, the skin of the plant, is composed of an extremely delicate membrane, formed by the union of minute bladder-like vesicles closely pressed together, while the middle layer or ring consists of a number of long tubes, with very minute cavities, their walls or sides being apparently thickened by numerous layers of lining material, by which the cavity has been almost obliterated. These tubes are termed bast-cells, and constitute in flax, hemp, jute, and other plants, the material employed for texile purposes. Proceeding inwards from the circle of bast-cells, we find the thin layer composed also of bundles of tubes, but differing in structure from the bast layer, being made of the comparatively short and inelastic vessels,* hardened by de-

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* The following statement of the composition of the straw of the flax plant will serve to show the proportion in which the various proximate compounds are usually present.

Composition of the straw of the plant before steeping, 100 parts consist of—

Wax	0. 270
Resinous matters, volatile oil, and lino-tannac acid	1. 090

posits which compose the wood of the plant, and which, when the straw is macerated in water, are rendered brittle and pulverulent, so as to be readily removed when exposed to friction.

The chemist discovers that the walls or boundaries of the cells and tubes of which the plant is composed are formed of a substance named *cellulose,* which may be regarded as identical in composition with starch; that is, it consists merely of the elementary body, carbon, and the elements of water, oxygen and hydrogen. But associated with this substance, which forms, as it were, the skeleton of the plant, are discovered other substances, attached to the interior of the walls of the cells, and contained either in a solid form within their cavities, or dissolved in water. Some of these substances contain, in addition to the elements of which cellulose is composed, nitrogen, and like all nitrogenized compounds, such as the curd of milk, and the albumen or white of the egg, are liable, under the influence of heat and moisture, to undergo decomposition, which, when allowed to proceed gradually, attacks and weakens the cellulose itself. By employing the influence of this substance, which acts like a ferment, it is possible to break up and separate the readily decomposable constituents of the plant from cellulose, which opposes greater resistance to its action. By rapidly drying the flax stem, as practiced in Belgium, the ferment may be rendered temporarily inert, or it may be entirely removed by steeping the flax in water, or by exposing it, spread on the field, to the influence of air and moisture.

From the earliest periods, the usual method adopted for the separation of the valuable bast fibres of the flax plant was to place the green or partly dried plants either in shallow pools of water, or in rivers, where they were allowed to remain until, by the decomposition of the cementing matters of the stem, the long and cylindrical fibres could, by simple mechanical means, be rapidly freed from the short and comparatively brittle structures which compose the woody portion of the stem, and outer layers of the bark. This was the process followed in ancient times in England, and it continues to the present day to be the popular method of the chief flax-growing countries. The pictorial representations on the walls of Egyptian tombs and temples show that it differs very little from that which cultivators of the valley of the Nile employed in the preparation of their flax crops. In England, the entire process is usually managed by the flax-grower; but in Belgium there exists a class of dealers by whom the flax is purchased from the farmer, and the preparation of the fibre conducted. It is easy to understand that, as managed by farmers, the steeping of the flax is an uncertain and precarious operation, especially in districts where that experience which has been acquired by farmers in the north of Ireland, in Flanders, and other flax-growing countries, does not exist. Sometimes the flax in hot weather is over-fermented, and the decomposing action is extended to the valuable bast fibres, which are rendered weak; and in other cases it is understeeped, and so only a coarse, harsh fibre is obtained. Usually from three to four weeks is consumed in the operation, and even in the hands of experienced steepers the fibre is frequently seriously deteriorated in value.

These objections to the patriarchal methods have at various times, especially when it was attempted to introduce the cultivation of the crop into new districts

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Sugar and coloring matter	5. 630
Inorganic matters	2. 910
Pectine	0. 360
Nitrogenized compounds, soluble in water	0. 835
Nitrogenized compounds, insoluble in water	4. 269
Insoluble inorganic matters united with the fibre	2. 500
Fibre	82. 137
	100,000

where the people were ignorant of even rude operations of the flax-steeper, led to the trial of other plans for the separation of the fibre. The methods which have been tried may conveniently be classed under three divisions:

1st. Those by which the separation of the fibre is effected by mechanical means. In the east, as is well known, it is usual to prepare the fibres of many indigenous plants by simple mechanical operations, by beating the fleshy leaves on stones, and removing the adherent cellular tissues by scraping and washing. 2d. Those in which the action of fermentation is employed, but its progress accelerated by the aid of an elevated temperature, and placed under the control of the steeper. 3d Those in which the solvent action of warm water, or of water to which chemical solvents are added, is used to effect the removal of the cementing matters of the straw. In 1812, a patent was taken out by a Mr. Lee for removing the fibre from flax by means of a machine, which was regarded by the Irish Linen Board as so important an invention, that they expended £6,000 in their endeavor to introduce it, but it failed to satisfy the public; and though since that time various attempts have been made by Mr. Donlan, in 1857, and others, to substitute machinery for the steeping process, it has been found, that as by these processes a large amount of the soluble and decomposable matters of the straw remain adhering to the fibres, fabrics formed from them are seriously injured by the various operations to which linen is subjected. Some years ago, Lord Fermoy made an attempt to apply machinery to the dry scutching of flax on his property in the county of Cork, and the fibre obtained was worked up into coarse fabrics; yet this method, though it might be useful in countries like India, where it is desirable to lessen the bulk of the fibre, cannot be regarded as likely to afford a material capable of taking the place of that prepared by the ordinary processes.

As already stated, the method which is adopted in the chief flax-producing districts at the present time resembles that which was used by the ancient flax-growers of Egypt, and which we find followed by the natives of Hindostan. The flax, either immediately after being pulled, as usually practiced in Ireland, or after being dried, as in many parts of Belgium, is immersed in pools or rivers. In a day or two fermentation commences, and is accompanied by a brisk disarrangement of bubbles of gas, while the water acquires the color of ale, and, as has been shown by the writer, contains butyric and valerianic acids.* Even under the direction of experienced workmen, the process requires the closest attention. In Belgium, the water of the river Lys is regarded as particularly favorable to the production of superior flax, and the dried flax grown by the farmer is purchased by factors, who place it in wooden crates, which are sunk in this river. The fibre thus obtained brings a high price, and is selected for the production of cambrics and table linen.

A successful attempt, in advance of the traditional practice, was made, in 1847, by Mr. Shenck, an American, who introduced into Ireland a method of treating flax-straw, by exposing it to the action of water maintained at the temperature of ninety degrees for sixty hours. The straw, after the separation of the seed, was placed in wooden vats furnished with false bottoms, perforated with holes, below which coils of metal pipe conveyed steam. The temperature was gradually raised to ninety degrees, and in about sixty hours the water was drawn off. By this treatment it was found that the fibre could be readily separated from the stem. The fermentation produced was found by the writer to resemble that which takes place in the common flax pool. Carbonic acid, hydrogen, and nitrogen gases were evolved, and in the liquid a large amount of butyric acid was formed; so that from the disagreeable smelling water of the flax pool we could extract the chief ingredient of several favorite perfumes and confections. For some time it was believed that this new method was destined completely to revolutionize the production of flax in Ireland, and to render the separation of the fibre a factory operation. Numerous retting factories were established, not merely in this country, but in Belgium, Holland, and Germany. Experience, however, proved that the quality of the fibre produced was frequently inferior, and that so much of the coloring and other matters of the stem remained attached to the fibre as to dissatisfy the spinner. An important improvement on the original plan of Mr. Schenck, proposed by Mr. Pownall, of London, has been found to remove many of the objections to the hot-water process. It consists in exposing the steeped straw, upon being removed from the tanks, to the pressure of a pair of smooth cylinders of cast iron, while at the same time a stream of water is made to flow upon the rollers, so as to wash away the softened organic matters which adhere to it. Thus treated, the flax has been found to yield fibre of superior quality; and though in Ireland the factory system has not succeeded in maintaining its ground, yet in England, and in numerous well-conducted establishments in France, Belgium, and Holland, Schenck's system, with various improvements on his original method of working, has been successfully adopted.

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*Report of the British Association of science for 1857.

Among the methods for the separation of textile fibres included in the third division, that of Messrs. Watt & Leadbetter, of Belfast, of which extensive trials were made a few years ago both in Ireland and Scotland, appeared likely, on its first introduction, to be attended with success. It differed from both the ordinary methods and Schenck's system, by employing, for the removal of the adhesive matters of the straw, neither the direct solvent action of chemical agents, nor of fermentation, but merely the dissolving agency of hot water applied in vats of peculiar construction, followed by the pressure of the steeped flax between heavy iron rollers. By this process the flax was merely macerated and softened, and the liquid obtained by heating it was free from the disagreeable odor of the flax pool, and, mixed with turnips and the husk of the flax, was used with advantage as a feeding stuff for pigs. The fibre obtained, however, though much superior to that produced by any of the *dry* processes, did not satisfy the requirements of our spinners and bleachers, and is now abandoned.

On the continent attempts have at several times been made to effect the solution of the cementing matter of the flax stem by the employment of weak acid and alkaline solutions; but though by such means it has been found possible to break up the structures of the plant, and to obtain fibre apparently of excellent quality, yet experience proved that it was inferior in tenacity and other essential properties to that obtained by the ancient methods. Among the various plans proposed some years ago, a process, patented by Messrs. Burton & Pye, of Ipswich, appeared to offer several advantages in the treatment of both native and foreign textile plants. The stems or leaves of the plant were, in the first place, subjected to the pressure of rollers, so arranged as completely to flatten the straw without injuring the fibre; and next, through fluted rollers, by which the comparatively brittle woody portion of the stem was broken and separated. This being effected, the flax was again passed under plain rollers, by which the fibres were delivered in straight filaments. The woody portion of the plant, hitherto regarded as useless, was employed by Messrs. Burton & Pye as food for cattle. By this method of treatment the straw was reduced to one-half of its original weight, and so prepared, it was submitted to another series of operations in vats of peculiar construction. First, it was made to undergo a process of fermentation in water, to which fuller's earth was added, and after being kept at a temperature of eighty degrees Fahrenheit for thirty hours the vat was filled with cold water. During the process a heavy plunger, which was fitted to the top of the steeping vat, was occasionally brought down upon the softened straw, and, after several washings with water, the operation was completed by the plunger being screwed down so as strongly to compress the flax and to partly deprive it of moisture. The drying of the flax was finished by exposure to the air under sheds open at the sides.

Specimens of the fibre of flax, and of jute, mudar, and other eastern plants treated by this process, appeared of good quality; but so far as we are aware no satisfactory trial of its value has yet been made.

Much interest was excited during the great exhibition of 1851 by the specimens of flax-cotton exhibited by the chevalier Claussen, who had zealously labored to show the flax-growers of this country that by means of the combined action of alkaline solvents, and of carbonate alkalies and acids, it was possible to convert flax-straw, previously cut into small pieces by machinery, into a material which was capable of being substituted for cotton, and spun with cotton machinery. A very beautiful article was produced by the processes employed, and used for the production of various fabrics; but though it was considered that it might be employed to convert "scutching tow" into a material of higher commercial value, useful for various purposes, the conversion of long flax into cotton was regarded as unprofitable and soon abandoned.

After the flax-straw has been fermented in the ordinary retting pools of Ireland or Belgium, or in the waters of rivers, or by exposure to the influence of the weather, by spreading it on the grass, by what is called "dew retting," as practiced in some parts of Europe, it is necessary that the brittle, woody portions of the stem should be separated from the elastic filaments. In Belgium, and, also, in the north of Ireland, the straw, on being removed from the steep water, is usually spread in thin layers upon a newly mown field for several days, and turned at least twice during its exposure. By this exposure, technically termed "grassing," the separation of the fibre is greatly facilitated, and its color also improved. In the hot water steeping establishments this grassing is not usually adopted, and the flax is dried at once on its removal from the tanks, either by exposure to the air or in houses by heated air. The next operation which the steeped and dried straw undergoes is breaking, which is performed when the work is conducted on the farm by means of a simple machine called a "brake," which consists of two heavy pieces of wood, each of which is furnished on one side with a number of parallel angular bars, so arranged that when the pieces of wood, which are connected by a hinge, are brought together, the angular projections of the bars on one frame are received into the hollows formed by the bars on the other. One of the pieces is permanently fixed to a support, while motion is communicated to the other either by means of an iron spring or by an elastic pole of wood attached to it, and connected with a treadle on which the workman presses with his foot. By placing a handful of the straw between the bars, and causing the movable bars to descend, it presses and breaks the brittle and inelastic structures of the central part of the stems, while the flexible fibre remains uninjured. In Belgium a wooden mallet is frequently the only kind of brake employed, and in some remote districts in Ireland, even yet, the farmer spreads the flax on the highway, and breaks it by driving a heavy cart over it. In the steeping establishments the straw is broken by exposing it to the action of a machine in which several pairs of fluted rollers perform the work.

After breaking the woody matter of the straw, it is necessary that it should be removed. In the north of Ireland this is usually effected in mills, which are to be found in every flax-growing district; but in Belgium, and also in some districts in Ireland, the farmer continues to use a simple manual implement, which is merely a flat blade of wood attached to a handle. The flax ready for "scutching," as this operation is termed, is held in the hand of the workman, who inserts it in a notch cut in one side of an upright wooden stand, and turning it so as to present every part to the blows of the blade, the woody matter is knocked away, producing what is known as "shove," or "boon." In the little scutching mills which are found in Ulster the usual machinery is merely the scutching blade attached to an axle moved by a water-wheel. In the new steeping establishments the scutching is performed by a somewhat similar arrangement, a number of blades of wood being attached to arms of cast iron, which extend from an iron axle moved by a belt from the steam-engine, each set of blades being enclosed in a separate chamber in the partition, on the one side of which there is an opening through which the workman can insert the flax without risk of being injured by the descending blades. The coarse and short fibres separated constitute what is sold as "scutching tow," or codilla. The shoves which fall below the blades are collected, and have been usefully employed to generate the steam required to work the machinery, three tons of shoves being stated to be equal as fuel to one ton of coal. The analysis of the shoves which we have made show that they are rich in all the organic materials of the flax plant,* and their use as manure offers a practical and economical method of restoring to the fields of the farmer the earthy and saline matters of the stem which are sold to the manufacturer. By the application of these ashes, and of the droppings of cattle fed on bolls of the plant, or on the crushed seeds, all apprehension of the exhausting effects of flax cultivation on our soil may be removed.

To scutch flax well, either at the common stand or in the mill, requires long practice and careful training. In Ulster, where from an early age boys possess the opportunity of acquiring the necessary experience, skilful workmen can usually be obtained; but beyond what may be regarded as "the flax country," it is exceedingly difficult to obtain the trained hands required. The ingenuity of engineers both of the continent and in this country has, therefore, for several years been directed to the invention of machines by which ordinary farm laborers might be enabled to take the place of trained scutchers. In the north of Ireland, machines invented by M. Mertens, of Ghent in Belgium, by Mr. McBride, of Armagh, and others, have for several years been tried, but have not been regarded as capable of performing the work required in a satisfactory manner. At present, the attention of those interested in the extension of flax cultivation is directed to the trial of two new machines, one of which is exhibited. These are the one invention of Messrs. John Rowan & Sons, of Belfast, a firm already distinguished by several valuable inventions, and the other of a German engineer, Mr. Joseph Friedlaender, who at present resides in Belfast.

Messrs. Rowan's machine, which is portable, and can be manufactured at a much lower price than those previously in use, appears likely to answer the objects contemplated. It can be wrought by two boys or women, and each person can scutch 4½ cwts. of flax-straw per day of ten hours, without any previous rolling or breaking being required. We had an opportunity of witnessing its performance both on Belgian and Irish flax, and found that the fibre produced was sound, well cleaned, and completely finished for the market. The yield of fibre in all cases depends upon the quality of the straw. Messrs.

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* Composition of the ash of shoves, or woody matter, of the flax matter, 100 parts, consist of—

Potash	7,73
Soda	5,91
Chloride of sodium	1,78
Lime	20,15
Magnesia	5,46
Oxide of iron	5,60
Sulphuric acid	6,50
Phosphoric acid	10,43
Carbonic acid	20,10
Silica	16,00
	99,66

Rowan states that from their experience of the different qualities operated upon by their machine, 112 pounds of straw of average quality will yield 22½ pounds of well cleaned fibre, whilst first-class Belgian straw has given so much as 30 pounds.

For the treatment of the steeped straw, Mr. Friedlaender has introduced two new machines—a beetling machine, which performs the work of the ordinary brake, and a scutching machine. The beetling machine consists of a number of upright iron rods, placed in a frame over a grooved block of wood, upon which the flax-straw is placed. The rods are moved by means of wipers attached to a revolving shaft, which raises "lifters" in connexion with the beetles; and as the wipers revolve the lifters escape, and the beaters fall by their own weight and break and soften the flax without cutting the fibre. The beetled straw is then carried to the scutching machine.

The scutched flax is carried from the scutching machine to the sorting room, where it is sorted into first, second, and third qualities. These, in Ireland, are made ready for market by being formed into bundles, each weighing 16¼ lbs. The scutching tow or broken fibre is used for the manufacture of coarse fabrics, such as sacking. To free it from the dust and shove which adheres to it, it is passed through a machine called a "devil," and is then, like the long fibre, sorted into three qualities.

The scutched flax, when prepared by the manual labor of Egyptian fellahs, or in the snug farmsteads on the hills of Down, by Russian serfs, or Belgian peasants, by the *malle*, or the patent machine, is not yet ready for the spinner, whose business is, either by means of the cottage wheel, or of those iron fingers which modern ingenuity has substituted for the human hand, to twist it into threads, which are afterwards to be united together according to their quality, to produce the stout canvas-like "fine linen" of Ulster, or the gauze-like cambric. It contains broken fibres, and the filaments are more or less matted together and require to be separated and arranged in parallel "reeds." This is effected by what is termed "hackling," which consists in drawing the flax repeatedly through sets of iron teeth, by which the broken pieces are combed out and the fibres arranged. Thus purified at last from every trace of the worthless woody matters which so obstinately adhered to it, the fibre is prepared to take its place as a textile material.

Mr. Alexander Redgrave, one of the government inspectors of factories, in a paper on the statistics of the manufacture of textile fabrics which he read at the statistical congress in London, in July 1860, estimated the quantity of flax and hemp, with materials worked up in Ulster, at 528,289,104 pounds, of the value of £7,254,875; the annual average weight worked up in each factory, at 1,266,880 pounds; value, £17,397; average weight to each horse-power, 23,375 pounds; and to each person employed, 6,582 pounds. The annual value of the industry in the kingdom is represented by—

Raw material	£7, 254, 875
Wages of 80,262 persons, at nine shillings per week, for fifty weeks	1, 805, 850
Coals, oils, grease, leather, &c	300, 000
Interest upon capital, &c	2, 808, 217
	12, 168, 942

In another place Mr. Redgrave estimates the capital invested in raw material at £2,800,000; in buildings, engines, and machinery, at £3,500,000; in wages, at £800,000; in grease, oil, leather, &c., at £125,000; making a total of £7,225,000.

The aggregate value of the goods manufactured is stated at £15,100,000, of which £8,837,412 is consumed in the United Kingdom, being at the rate of 6*s.* 2¼*d.* for each individual. The distribution of the manufacture gives an annual average of £29,182 to each factory, £664 to each horse-power, and £151 to each person employed. The number of persons dependent upon this industry in the United Kingdom may be taken at 80,262 employed in factories, 210,469 employed out of factories, 72,682 persons dependent upon these, making a total of 1,017,558, or a centesimal proportion upon the population of 3½, equal to one-fifth of all employed upon textile fabrics, and one-half of those employed upon cotton.

In France there are about 180 flax factories, with 500,000 spindles, consuming annually about ninety million pounds of flax. Of this large consumption about one-third only is produced in the country, and Russia comes chiefly to the aid of France, as it does to England, in supplying the raw material. To equalize the production with the consumption it would require 50,000 hectares more to be cultivated with flax in France. The average annual exports of France are: flax to the value of thirty million francs, and hemp three million francs—together, £1,500,000.

In the jury reports of the Paris international exhibition of 1855, the number of spindles working on flax was thus given for various countries, by M. Désiré Scribe:

	Spindles.
United Kingdom	1, 400, 000
France	500, 000
Belgium	150, 000
Austria	120, 000
Prussia	80, 000
Germany	20, 000
Russia	60, 000
Other countries	70, 000
	2, 400, 000

The fixed capital engaged on this industry, calculated by him at the moderate price of £6 per spindle, is thus brought up to £14,400,000. Estimating at £8 the annual produce of each spindle, this would give a gross sum of £19,200,000 as the value of the flax produced. The transformation of the fibre into linen will give an increased value of fully as much more. But this is not all; hand-spinning is still carried on extensively in many countries, especially in Germany and the north of Europe, and it is currently believed by the Paris jurors that, could correct details be obtained, the produce of the hand-spun flax on the continent would be found to equal that of the machine-made linen. So that, within moderate limits, we may fairly estimate the total annual production of the flax industry of Europe at £60,000,000.

The flax shown from Norway does not call for much notice. Its culture there dates as far back as the Pagan times, before the year 1000. Flax is to be met with up to the polar arch at least, and perhaps even further north, but only in small quantities. The cultivation of flax in Norway, owing to various causes, is attended to less and less every year. By degrees, as country people began to manage their households in a more rational manner, it was found unprofitable to cultivate the flax plant, probably because much cheaper stuffs could be obtained from cotton. As a general rule, those plants which are cultivated for their use in the arts and manufactures do not occupy any prominent place in Norwegian agriculture, except, perhaps, in the vicinity of towns, where ground is valuable, and where there are greater facilities for obtaining the requisite quantity of manure.

The culture of flax in the elevated regions of the Giant mountains, the Swabian and the Carpathian mountains, and in the Alpine ranges of Austria, existed for a long time in its primitive state, until lately, when the establishment of extensive flax-steeping waters, and the increased introduction of mechanical spinning factories for yarn, gave a powerful impulse to the culture, both in quantity and quality. In the eastern and southern parts of the empire, the culture of flax gives place to that of hemp. Southeastern Hungary, and the Venetian provinces, produce these fibres of a superior quality. The average yearly production is about 2,000,000 cwts. of flax, and 1,000,000 cwts. of hemp; but this is insufficient for the local demand, and the quantity imported in 1860 was 67,000 cwts. of flax, and 100,000 of hemp.

In the Danish court, Mr. J. Andersen, of Fredericksburg, Copenhagen, exhibits a variety of specimens of flax in its various stages. His mill is driven by steam-power, and is arranged according to the Irish system, and is the only flax-scutching mill in the country. It has been at work since 1847. The Danish farmer generally cultivates but little flax, and usually only sufficient for his own use. He gives himself little trouble in procuring Riga seed, and neglects the preparation and weeding of his field. Mr. Andersen has done all in his power for many years to awaken an interest in the farmers of his country for the Irish mode of cultivating and cleaning flax, and also by procuring Riga seed, distributing books gratis explaining the culture and treatment of the fibre, in which good work he has been aided by the Royal Danish Agricultural Society. His perseverance has in some measure been crowned with success, and he has received a medal of merit from the King of Denmark. The samples shown in this case (1 to 27) were grown by different farmers last year; the remainder exhibited were grown by himself. One improved acre of land produced him 463 pounds of flax. The others shown averaged 458 pounds to the acre. Coils of rope (hemp and Manilla) and rolls of canvas are shown from Denmark. (In the Appendix will be found the report of the jury on flax and hemp in full.)

CLASS 20.—*Silk and velvet.*

The report of the jury in this class is referred to as containing a very full account of the silk manufacturers. An interesting account is given of a new producer in this field—*Japan*, which is just beginning to enter into competition with the other nations for a portion of this trade. In several departments the Japanese furnish articles which are not excelled, if equalled, by any other nation. The imports in England for 1862 was 10,844 bales, of which 10,178 bales were consumed, the quality of somed escriptions treading closely upon the best European silks.

CLASS 21.—*Woollen and worsted, including mixed fabrics.*

The exhibition in this class was one of great merit, and the competition between the various countries who exhibited largely was very spirited, especially between England, France, Austria, Belgium, Prussia, and Saxony. Austria has made more progress in woollen manufactures than any inland country in Europe. We had a single exhibitor. The Manchester Print Works had delaines and woollen hose, and received a *prize medal* with high commendation. *Shoddy*, a famous article in our war clothing, is recognized in the exhibition as one of the most important interests, being *second only* to wool. We give the report of the jury in the Appendix which shows fully the many improvements made in this class.

CLASS 22.—*Carpets.*

This was a class of great merit, though the exhibition was not very extensive.

India and Turkey showed each some very choice carpets. England and France were the largest exhibitors, and their reputation was well sustained, they receiving a large share of the prizes. A carpet suspended on the side of the exhibition hall was marked for sale at £800—$4,000. I presume it found a purchaser.

CLASS 23.—*Woven, spun, felted goods, &c.*

The exhibition was not very large. The competition was mainly between England, Austria, France, and Prussia. They had very superior goods. Calico printing has increased very largely since 1851. There has been great improvement made in *dyeing* by the use of coal tar, which has caused a revolution in the art. The report illustrates fully the importance of this class.

One exhibitor from the United States—Manchester Print Works—exhibited printed fabrics and received a *prize medal.*

CLASS 24.—*Tapestry and lace manufactures.*

England, Belgium, India, France, and Switzerland were the leading exhibitors' and the display in this class was extremely rich and attractive, and the costly laces found purchasers among the nobility and gentry at prices which would be considered fabulous even here.

France exhibited *real French lace*—the lace of Alencon. It is made with the needle, and it employs eight thousand women. There are fifty-thousand women employed in France in making black silk lace. At Bailleut ten thousand women are employed in making Valenciennes lace. Twenty-thousand girls are employed on white and black guipure, used in shawls and flounces. One hundred and twenty thousand girls are employed in producing a lace known as *puy*, the most important lace for workmen in the kingdom.

The white Alencon at the exhibition, from France, sustains its renown as the queen of lace for its fineness. The report is very full in this class.

CLASS 25.—*Furs, feathers, and hair.*

There is nothing of special interest other than what is given in the report.

One exhibition of *curled horsehair*, from the United States, Wiggins & Co., New York—*prize medal* awarded.

CLASS 26.—*Leather, including saddlery and hardware.*

The report of the jury embraces all that there is important in this class.

There was one exhibitor from the United States, Joseph Kohustomm, New York—a substitute for morocco leather, very extensively used in England since 1851. 'Tis said to be the best substitute for leather that has yet been discovered.

CLASS 27.—*Articles of clothing.*

The report of the jury will give all that is important in this class, as also hats, caps, bonnets, boots, and shoes.

R. A. Tilghman, Philadelphia.—Medal awarded for samples of fatty acids from aqueous saponification.

Section C.—Manchester Print Works, United States, woollen hosiery.—Honorable mention.

CLASS 28.—*Paper, stationery, printing, and bookbinding.*

In this class, Dexter & Co., New York, exhibited books in the Indian language. H. Stevens, 4 Trafalgar Square, London, agent for American institutions and societies in the exchange of publications, a large variety of American books and photographs. S. Low, Son & Co., Ludgate Hill, London, specimens of American books.—Gur & Co., 10 Strand, London, specimen of American newspapers. M. P. Jewett, Poughkeepsie, New York, catalogue of female seminaries in the United States.

There were but few exhibitors in this class. There were forty-seven exhibitors of first class paper and thirty-eight of all other sorts from rags, making eighty-five in all. Paper from ropes, four; from straw, wood, and other materials, eleven. The report of the jury embodies the experiments to manufacture paper from straw, wood, grass, &c., and gives all that has been discovered up to the present time. But there does not appear to be any substitute for rags yet for white writing paper.

The printing and binding was excellent, but nothing of special improvement requiring examination further than is given by the report of the jurors.

CLASS 29.—*Educational works and apparatus.*

S. Taints & Co., Philadelphia, Pennsylvania, map of the United States· This was a new department, and a very interesting one, and had our country been represented as it might have been, a great boon would have been afforded to the world, and our great improvements in education in our common schools and seminaries would have received attention, and would, in many countries I have no doubt, been adopted.

The countries most distinguished were England, France, Italy, Zollverein, Austria, Prussia, Belgium, and Norway.

As all the details of education are given in the report of the jurors, I shall not enlarge here, but would call special attention to the report which shows a far more extended and minute attention to the education of the people in most countries making it compulsory than has generally been supposed in this country.

CLASS 30.—*Furniture, paper-hangings, &c.*

J. F. Pickhandt, New York, extension sofa bedstead, a very convenient article.

F. M. B. Bertram, New York, two reception easy rocking chairs or invalid reclining chairs; a very great curiosity in England, where such a thing as a rocking chair is very seldom seen.

Dr. W. H. Boyle, of California, a new dental chair, a very ingenius and useful acticle, both for the operator and his subjects. Would that there had been a barber's chair, an article scarcely ever heard of in many of the large cities of England, and even in London almost unknown.

The exhibition in this class, especially in furniture, showed a very great improvement since 1851, in the English department especially. The furniture was greatly improved, and showed the great advantage derived from that exhibition, when England was very far behind France and other nations on the continent. The principal exhibitors were England, France, Italy, Hamburg, Austria, Rome, Belgium, Prussia, &c.

CLASS 31.—*Hardware.*

The manufactures in iron, brass, copper, tin, &c., was very attractive, and England made an extraordinary show. Austria, Belgium, France, Prussia, Sweden, Barvaria, and Italy, had very fine exhibitions, and the whole of this class was a very interesting one.

The jury in this class made a report on education of the masses. It is not very apparent what connexion there is between hardware and education. Their views do not correspond with those of the regular jury on education. My own impression is that there will be much yet to be done to perfect the education of the masses, though in some remarks connected with education we have showed what is being done, and it will be found that very much more is now being done, than is generally supposed in this country.

CLASS 32.—*Steel, cutlery, and edge tools.*

This was a very superior class, and one of the most complete and finished in the exhibition. The articles of the English exhibitors were of very great excellence, and from the continent there were many choice articles, but I have not the data to give an account in detail.

W. Blackwell, No. 9 Cranborn lane, London, exhibited American tailors' shears, admitted, so far as I could ascertain, to be superior to all others. Messrs. Blackwell & Co., who formerly carried on the business of manufacturing tailors' shears for many years, have given it up, and sell Hensick's American shears, on account of their great superiority in lightness, strength, elegance of shape, and power of retaining the cutting edge.

CLASS 33.—*Works in precious metals, jewelry, &c.*

This was a class well represented. Two exhibiters from the United States: W. H. Green, Meredin, Connecticut, new patent revolving caster; J. A. Brown & Co., New York, sample of plated lockets, a neat and tasty article.

This class was peculiarly attractive, and the wealthy of every section purchased largely of the highest priced articles exhibited by most of the nations represented.

CLASS 34.—*Glass for decorative and household purposes.*

Stained glass was much in advance of the exhibition of 1851, especially in the English department. Great improvements have been made by the English manufacturers. In ordinary household and fancy glass there was much advance in some of the countries. Hartell & Letchworth, Philadelphia, fine samples of glass jars for sealing fruits and preserves.

The American Bank Note Company, New York, exhibited samples of engraving of very beautiful design, executed by machinery, called lathe-work. Although not connected with this class, it seems to have been referred to as worthy of notice by the jurors.

CLASS 35.—*Pottery.*

A small class, but many interesting specimens of earthen, china, porcelain and decorative pottery and Parisian ware.

CLASS 36.—*Dressing-cases, travelling-cases, &c., for the comfort of travellers.*

A collection which might have been dispensed with in an exhibition like without disarranging the exhibition.

FINE ARTS.

This was an entirely new feature of the exhibition, and proved very attractive; the finest paintings, statuary, and engravings from all the principal galleries in Europe and Great Britain. Here, without the expense in travelling over Europe, and being raced through the picture galleries, might be found many of the most celebrated works of art which the world has ever known, which could be examined at your leisure, and comparison could be here made, which could not be done in detached galleries. The show in the British division was a very interesting one, and vastly superior, I should judge, to what was generally anticipated.

France showed largely and splendidly, as did Italy, Austria, German states, and Belgium.

The United States had, in statuary, Story's two works, which were unsurpassed in the exhibition. Mosier also, who had several very choice statues, and Miss Hosmer, as a female artist, I think had no superior. Cropsey's autumn scene on our own Hudson, a landscape painting, was a very attractive picture, which did great credit to our country; and which passed into the gallery of some noble English gentleman at a price quite satisfactory, we believe, to Mr. Cropsey, than whom there was no more intelligent and faithful representative of our country in the exhibition.

In closing this report, I am fully sensible that we have much yet to learn, as is shown in this great exhibition; and there was much, if rightly improved, to benefit our country. Those who were present and carefully examined the contributions on exhibition, cannot fail to have seen that very much remains for us to learn from the nations there represented, and I shall be much mistaken if we do not avail ourselves of what was there exhibited, which may be introduced here to advantage to our own country.

Although our representation was much less than in 1851, still it was, in the main, of such a character as to attract the special attention of the jurors, whose awards testify to the great value of our inventions, and will lead, I have no doubt, to extensive orders from other countries.

From the general expressions among those present from other nations, we think that exhibitions of this character will continue to be held among the different nations; and, as the field of these exhibitions embraces the world, it is manifestly of great importance that our country should be fully represented. Our country will amply be repaid for any reasonable outlay that should be made to defray the expenses of exhibiters.

I cannot, in justice to myself, omit to bear testimony to the kind attentions extended to our department by her Majesty's commissioner and the executive committee, and also to Dr. Lyon Playfair, commissioner of the jury; Professor P. C. Owen, superintendent of the foreign department, and F. E. Sandford, esq., secretary and general manager, with whom we were in constant communication, and whose efforts were untiring, and their arrangements such as to secure, as far as was practicable, a thorough and satisfactory examination of everything presented for the examination of the jurors.

To his excellency Mr. Adams, the United States minister, and his assistants, and to Mr. F. H. Morse, consul in London, we were favored with every assistance in their power to prepare the building for the reception of our articles, and to assist in defraying the expenses necessarily incurred, and without their aid and co-operation we should have been greatly embarrassed.

To Dr. J. R. Black, a native of this country, long a resident in London, we found a most valuable and discreet friend and counsellor, and we owe much of our success to his wise and discriminating counsels, which were invariably extended to us.

To J. F. Cropsey, esq., artist, now in London, who was constantly devoted to our exhibition, and who also contributed greatly to our success, we owe many thanks; united with Dr. Black, in all matters relating to our division their labors were most valuable. To these gentlemen, in connexion with Joseph E. Holmes, esq., the assistant commissioner, we are indebted for the successful carrying out of the plan adopted for our exhibition, and the gratifying result of their labors will bear to them its high reward. I deem this tribute justly due to these gentlemen for their most valued and efficient services.

I may have omitted the notice of some articles of interest from this country, which were received after the jurors had completed their labors, but I trust there will be but few that are not noticed.

B. P. JOHNSON.

ALBANY, NEW YORK, *February*, 1863.

LIST OF ARTICLES FROM THE UNITED STATES TO WHICH AWARDS WERE MADE, AS APPEARS FROM THE BOOK OF AWARDS PUBLISHED AND SUBSEQUENT CORRECTIONS.

CLASS 1, SECTION 1.—*Mining, &c.*

Thomas Meads, Lake Superior, cabinet of copper and silver ores, honorable mention.

New Jersey Zinc Company, spiegel iron produced from franklinite, honorable mention.

J. Moshimer, (commissioner from Nevada Territory,) silver and gold ore from the celebrated Washoe mines, honorable mention.

CLASS 2.—*Chemical substances.*

F. S. Pease, Buffalo, N. Y., refined petrolium and lubricating oils, prize medal.
Glen Cove Starch Company, New York, samples of starch, prize medal.
Kingsford Oswego Company, silver starch, prize medal.
H. G. Hotchkiss, Lyons, N. Y., winter green oil, prize medal.
Alfred Hall, Lyons, N. Y., oil of peppermint, honorable mention.

SECTION B.

Philadelphia College of Pharmacy, American vegetable drugs, &c., prize medal.

CLASS 3.—*Substances used as food.*

Hecker Brothers, New York, "superlative wheaten flour," prize medal.
Stebbins & Co., Rochester, N. Y., barrel of superior flour, honorable mention.
Glen Cove Starch Company, New York, samples of corn-flour, called "maizena," prize medal.
J. Waddell, Springfield, Ohio, Indian corn in the ear, honorable mention.

CLASS 4.—*Animal and vegetable substances used in manufactories.*

F. S. Pease, Buffalo, N. Y., collection of oils, chiefly animal, prize medal.

SECTION B.—*Perfumery.*

H. G. Hotchkiss, Lyons, N. Y., essential oils, prize medal.
A. Hall, Lyons, N. Y., essentials, honorable mention.

CLASS 6.—*Carriages not connected with rail and tram roads.*

Blanchard & Brown, Dayton, Ohio, wooden wheel spokes, machine-made, prize medal.
Brewster & Co., New York, phæton, prize medal.

CLASS 7.—*Manufacturing machines and tools.*

Wheeler & Wilson, New York, sewing machine, prize medal.

A. Howe, New York, sewing machine, prize medal.

I. M. Singer, New York, sewing machine, honorable mention.

Willcox & Gibbs, New York, sewing machine, honorable mention.

C. B. Goodwin, by Bigelow, Boston, sewing machine, honorable mention.

Alexander Smith, West Farms, N. Y., loom for weaving tufted fabrics, prize medal.

Sandford & Mallory, New York, flax and fibre dressing machines, honorable mention.

G. H. Sanborn, cord and rope-making machines, honorable mention.

W. D. Richards, improved boot and shoe machinery, prize medal.

P. H. Wemple, Albany, new machine for boring slats, blinds, &c., honorable mention.

Blake Brothers, New Haven, Conn., stone-breaking machine, prize medal.

Fred. Otto Degner, New York, printing press, honorable mention.

Edward Conroy, Boston, cork-cutting machine, prize medal.

CLASS 8.—*Machinery in general.*

F. E. Sickles, New York, steam-steering ship's apparatus, in naval department, prize medal.

J. H. Allen, New York, horizontal non-condensing engine, prize medal.

W. D. Andrews, centrifugal pump and engines, prize medal.

Captain John Ericsson, New York, hot-air engines, prize medal.

A. G. Gibson, improved carriage coupling, prize medal.

John C. Gore, Massachusetts, belt-shifter, prize medal.

C. L. Goddard, New York, mestizo burring-picker, prize medal.

T. Hansbrow, California, pumps, prize medal.

Kershaw & Colvin, Philadelphia, cow-milking machine, prize medal.

Joseph E. Holmes, New York, improved swing.

Lee & Larned, New York, steam fire-engine, prize medal.

C. Near, New York, dynamometer, prize medal.

D. Parker, New Hampshire, washing machine, prize medal.

Brothers Peasant, Ericsson's hot-air engine, prize medal.

C. T. Porter, Auburn, N. Y., invention of governors, prize medal.

C. B. Richards, Hartford, Conn., indicator, prize medal.

J. Ross, New York, conical burrstone mills, prize medal.

Henry Steele, Jersey City, steam-pump, prize medal.

S. Wilcox, jr., Rhode Island, hot-air engine, prize medal.

R. H. Worthington, New York, Duploy's steam-pump, prize medal.

C. H. Dennison, Wilcox's hot-air engine, honorable mention.

John Dickenson, diamond mill dress, honorable mention.

J. J. Eckell, New York, combination press, honorable mention.

A. M. Foote, New York, lock umbrella stand, honorable mention.

H. H. Parker, ratchet drill, honorable mention.

H. Walcott, button-hole cutters, honorable mention.

Walker & Epperstein, portable mineral soda water apparatus, honorable mention.

Wentworth & Jarvis, Iowa, windmill water elevator, honorable mention.

CLASS 9.—*Agricultural and horticultural machines and implements.*

Cyrus H. McCormick, Chicago, reaper and self-raker, prize medal.

Walter A. Wood, Hoosick Falls, N. Y., reaping and mowing machine and grass mower, prize medal.

Russell & Tremain, Fayetteville, N. Y., reaping and mowing machine, honorable mention.

Kirby & Osborn, Auburn, N. Y., Kirby's combined reaper and mower, honorable mention.

Douglas Axe Company, Massachusetts, axes and wood-working tools, prize medal.

Wentworth & Jarvis, Iowa, automatic farm-gate and model of windmill, honorable mention.

Levi A. Beardsley, South Edmunston, New York, hay and earth elevator, honorable mention.

Robert Price, Albany, N. Y., churn and mop, honorable mention.

Colvin & Kershaw, Philadelphia, cow-milker, prize medal.

Batchelor & Son, Vermont, hand tools, prize medal.

Blanchard & Brown, cotton-planter, prize medal.

J. F. & W. Dare, steel ploughs, prize medal.

CLASS 11.—*Military engineering, &c.*

Colt's Patent Fire-Arms Manufacturing Company, Hartford, Conn., guns' pistols, &c., prize medal.

CLASS 12.—*Naval architecture and ship's tackle.*

W. H. Ward, Auburn, N. Y., lanterns for night signal telegraph, prize medal·

CLASS 13.—*Philosophical instruments, &c.*

Darling & Swartz, Bangor, Me., steel rules, measures, &c., prize medal.

CLASS 14.—*Photography and apparatus.*

Dexter, series of busts of governors of the United States, honorable mention.

CLASS 16.—*Musical instruments.*

Steineway & Sons, New York, piano, prize medal.

G. H. Hulscamp, New York, piano, prize medal.

G. H. Hulscamp, New York, violin, prize medal.

CLASS 17.—*Surgical instruments.*

Robert Bates, Philadelphia, mechanical appliances for curing stammering, prize medal.

CLASS 21.—*Woollen and worsted goods.*

Manchester Print Works, New Hampshire, delaines, prize medal.

CLASS 23.—*Woven, spun, and felted goods.*

Manchester Print Works, printed fabrics, prize medal.

CLASS 25.—*Furs, feathers, and hair.*

Wiggins & Co., New York, curled horsehair, prize medal.

CLASS 27.—*Articles of clothing.*

R. A. Tilghman, Philadelphia, fatty acids from aqueous saponification, prize medal.

CLASS 27, SECTION C.—*Hosiery, &c.*

Manchester Print Works, woollen hosiery, honorable mention.

CLASS 28, SECTION B.—*Stationery.*

American Bank Note Company, New York, variety of excellent bank bills, prize medal.

C. M. Saxton, New York, process of sealing official documents, prize medal.

S. Sweet, New York, process of producing blocks for printing, prize medal.

CLASS 32, SECTION B.—*Cutlery and edge tools.*

W. Blackwell, Heusick's American tailor's shears, prize medal.

Douglas Axe Company, edge tools, prize medal.

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